

22 NOV. 1910

24 St-Paul's Square

Dear

YORKSHIRE PHILOSOPHICAL SOCIETY.

ANNUAL REPORT

FOR

MCMVIII.



ANNUAL REPORT
OF THE COUNCIL
OF THE
YORKSHIRE
PHILOSOPHICAL SOCIETY

FOR

MCMVIII.

PRESENTED TO THE ANNUAL MEETING,

FEBRUARY, 1909.



YORK:
COULTAS & VOLANS LTD., PRINTERS, LITTLE STONEGATE,
1909.

TRUSTEES
OF
THE YORKSHIRE MUSEUM,
APPOINTED BY ROYAL GRANT,

TEMPEST ANDERSON, M.D.

GEORGE A. AUDEN, M.D.

LORD DERAMORE.

CHAS. E. ELMHIRST.

SIR GEORGE GIBB, LL.B.

EDWIN GRAY, LL.M.

T. S. NOBLE.

PATRONS
OF THE
Yorkshire Philosophical Society.

HIS MAJESTY THE KING.

HER MAJESTY THE QUEEN.

H.R.H. THE PRINCE OF WALES.

H.R.H. THE PRINCESS OF WALES.

OFFICERS OF THE SOCIETY, 1909.

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G. YELD, M.A.

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TEMPEST ANDERSON, M.D., D.Sc.

CHAS. E. ELMHIRST.

CURATORS:

| | | |
|---------------------|-----------|-----------------------------------------------------------------|
| ARCHÆOLOGY | - - - - - | { T. BOYNTON, F.S.A. C. WAKEFIELD. Rev. J. SOLLOWAY, D.D. |
| GEOLOGY | - - - - - | Rev. W. JOHNSON, B.A., B.Sc. |
| MINERALOGY | - - - - - | |
| COMPARATIVE ANATOMY | - - | T. ANDERSON, M.D., D.Sc. |
| ORNITHOLOGY | - - - - - | J. BACKHOUSE, F.Z.S., M.B.O.U. |
| BOTANY | - - - - - | H. J. WILKINSON. |
| OBSERVATORY | - - - - - | { T. S. NOBLE. DENNIS TAYLOR. |
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| ENTOMOLOGY | - - - - - | S. WALKER. |
| LIBRARY | - - - - - | H. M. PLATNAUER, B.Sc. |

GARDEN COMMITTEE :

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M. SPENCE.

H. J. WILKINSON.

M. B. COTSWORTH.

G. YELD, M.A.

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S. WALKER.

THE SECRETARIES (*ex-officio*).

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G. YELD.

H. M. PLATNAUER, B.Sc.

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PHOTOGRAPHIC SECTION :

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J. N. KITCHING (*Vice-President*).

H. DENNIS TAYLOR and M. SPENCE (*Secretaries*).

KEEPER OF THE MUSEUM :

OXLEY GRABHAM, M.A., M.B.O.U.

REPORT OF THE COUNCIL
OF THE
YORKSHIRE PHILOSOPHICAL SOCIETY,
FEBRUARY, 1909.

IN presenting the Annual Report for the year 1908, the Council feels that it has every reason to congratulate the Members upon another successful year's work.

In addition to the usual Spring and Winter Lectures, a list of which will be found at page 8 of the Report, a new departure was made last March and April by the introduction of three Natural History Lectures to children. These were given by Miss Simpson, of Leeds University, on "Pond Life," and were illustrated both by lantern slides and specimens. The lectures proved a great success, the Theatre of the Museum was crowded with young people who followed the life history of the frog with the keenest interest, and it is hoped that a similar series of Children's Lectures may be repeated in the near future.

In April, the York Field Naturalists' Society, which had held its meetings and kept its books and specimens in our Museum, was dissolved and re-formed as a Section of the Philosophical Society, very much on the same lines as the Photographic Section. It was felt that the multiplication of Societies with kindred objects was a mistake, and that greater usefulness could be achieved by amalgamation.

At the request of your Council, Messrs. Platnauer and Benson have prepared and presented a Report upon the condition of the monuments in the lower room of the Hospitium and the ruins of St. Mary's Abbey and St. Leonard's Hospital. They found that, beyond washing, the monuments in the Hospitium required little further attention, but that the ruins

of St. Mary's Abbey and St. Leonard's Hospital were in a very unsatisfactory condition. The damage is caused partly by mechanical and partly by chemical agencies. The former includes disintegration by vegetable growth and attrition by dust and sand driven by the wind, and the latter by the action of the acids in the air, derived from smoke. The Report recommends the removal of vegetation, the use of movable wind screens, and the treating of the exposed stone work with alkalised limewash. Your Council propose to set aside a fixed sum each year for the above purposes.

During the past year an alarm was raised that certain Committees of the York Corporation recommended the removal of Queen Margaret's Archway, for the purpose of improving the access to and from Gillygate. Your Council at once drew the attention of the Town Clerk to the terms of the Conveyance of the Abbey Walls, by your Society to the Corporation, which expressly provided that no part of the wall should be taken down, but that the same should be kept in repair by the Corporation. The question came before a full meeting of the York City Council, and on an application to the Town Clerk, he advised that the contention of your Society appeared to him to be correct. We are glad to add that the vast majority of the Members of the City Council were warmly in favour of the preservation of this interesting relic, and appeared to appreciate the action of the Society in handing them over.

During the month of July, the Wesleyan Methodist Conference was held in York, and two Special Meetings and Garden Parties of that body were held in the Museum Gardens.

The preparations for the York Historic Pageant have proceeded throughout the year, and everything points to a great success. The granting of one free ticket to each Member of our Society has been much appreciated.

The Financial Statement shews that our expenditure has exceeded our income by the sum of £81 6s. 6d. This is due to the purchase from Mr. Backhouse of the whole of the cases fitted up by his late father at West Bank, Acomb, and includes part of the specimens contained therein. Although your

Council have not up to the present been able to utilize the whole of these cases, owing to lack of space, it is hoped that further accommodation will shortly be provided, and in that event the purchase will prove a most useful one considerably below the cost of providing new cases.

Your President, Dr. Tempest Anderson, is in New Zealand, and will doubtless bring home material for future lectures. The Members are indebted to him, not only for securing and arranging the Lecture Programme, but also for a donation of £20 towards the purchase of the Backhouse Cases, and for the Entertainment provided at a most enjoyable Garden Party on the 10th July last.

Your Council recommend the Rev. E. C. Owen and Messrs. H. C. Shann, E. R. Tate, and H. V. Scott, as new members of the Council in the place of those retiring by rotation.

The Society has lost 9 Members and 1 Lady Subscriber by death, and 28 Members, 2 Lady Subscribers, and 2 Associates by resignation, these losses have been more than counter-balanced by the increase in new members.

Your Council would specially call the attention of the Members to the loss the Society has sustained by the death of Canon Fleming and Mr. Edward Taylor. Both took a lively interest in the welfare of your Society.

The late Canon Fleming opened the Autumn Session of 1907 with a Reading from Shakespeare, and had promised a similar treat for the Autumn Session of 1908, but fate decreed otherwise.

The late Mr. Edward Taylor presented your Society, amongst other gifts, with the most interesting relics of a Roman Christian Burial, preserved in the upper room of the Hospitium.

The Lectures delivered on Thursday Evenings were as follows :—

Thursday, January 9th.—“The New Colour Photography,” (with Lantern Illustrations). By F. Martin Duncan, F.R.P.S.

Thursday, January 23rd.—“York Minster,” (with Lantern Illustrations). By E. H. Howard.

Thursday, February 6th.—“Alpine Plants,” (with Lantern Illustrations). By G. Yeld, M.A.

Thursday, February 20th.—“Green Leaves and their Work,” (Illustrated by Lantern Pictures). By Harold Wager, F.R.S.

Thursday, March 5th.—“The Animals of the Two Great Southern Continents,” (with Lantern Illustrations). By R. L. Lydekker, F.R.S.

Thursday, March 19th.—“The Story of Elba,” (with Lantern Illustrations). By the Rev. T. T. Norgate, F.R.A.S., F.R.Hist.S.

Thursday, April 2nd.—“Idealism and Realism in Literature.” By the Rev. E. C. Owen, M.A.

Thursday, April 30th.—The Members of the Photographic Section gave a Lantern Night.

Thursday, October 15th.—“Mexico,” (Illustrated by Lantern Pictures). By the President, Tempest Anderson, M.D., D.Sc.

Thursday, October 29th.—“The Panama Canal,” (Illustrated by Lantern Pictures). By Vaughan Cornish, D.Sc., F.R.G.S.

Thursday, November 12th.—“The Zambesi beyond the Victoria Falls,” (Illustrated by Lantern Pictures). By A. Trevor Battye, M.A., F.L.S., F.R.G.S.

Thursday, November 26th.—“The Romance of Forest Life,” (Illustrated by Lantern Pictures). By F. Martin Duncan.

Thursday, December 10th.—“Old Yorkshire, past and present,” (Illustrated by Lantern Pictures, and Exhibition of Quaint Implements in common use in olden times). By W. Horne, F.G.S.

Miss Mary Simpson, of the University, Leeds, gave a course of three Lectures to Young People, subject, “Life in a Pond,” illustrated by Lantern Slides and Living Specimens.



ARCHÆOLOGY.—A number of additions have been made during the year to the Antiquarian treasures of the Society, including a native musical instrument from Zanzibar, the gift of Mr. W. Cooper; an old hand-braiding loom from Dr. Tempest Anderson; 3 assignat money orders of the time of the French Revolution, from Capt. Edwyn Walker; and several examples of Yorkshire pottery, from Mr. C. Scott, Mr. P. Crossley, and Mr. R. W. Bond. The Curators have to report that the collection under their care is in good order. They hope soon to be able to make the antiquities more useful to members and visitors by some method of re-labelling and re-arrangement. During the year, partly through the timely action of the Society, the archway near Bootham Bar has been preserved in its original form and site, and a Sub-Committee has had under consideration the question of preserving the walls of the S. Leonard's Hospital and other buildings in the care of the Society. The matter is still *sub judice*.

BOTANY.—No additions have been made to the Herbarium, but the specimens are in good condition.

ENTOMOLOGY.—No additions of importance have been made to the Society's collections during the past year. The cabinets have been duly inspected, and the specimens have been maintained in good condition.

GEOLOGY.—During the year Mrs. John Francis Walker has presented to the Museum an extensive and valuable selection of fossils collected by our late Vice-President. They fill six cases and comprise several hundred well preserved specimens, most of which are already labelled. While they cover most of the English strata, they are especially fine in Trigonia, Ammonites and Echinoids, obtained from Yorkshire exposures. They are being listed and arranged.

LIBRARY.—The Society is indebted to the Rev. Dr. T. G. Bonney, F.R.S., for a series of the "Philosophical Transactions." This is an especially useful donation, as it brings our set of these publications, which had previously stopped at 1866, up to date. In other respects the growth of the Library has been normal, but every year makes the space question a more acute one.

METEOROLOGY.—*Statistics of Station*:—Longitude, $1^{\circ} 5'$ W.; Latitude, $53^{\circ} 57'$ N.; height above mean sea level, 56 feet.

Temperature ranged in 1908 between 13°F. and 84°F. , the average mean temperature for the year being 48.8° as compared with 47.2° for 1907. The lowest temperature was recorded on December 30th, when the absolute minimum thermometer read 13°F. , whilst the highest reading was taken on July 2nd, when the reading was 84°F. , an advance on 1907 of 8°F.

The outstanding features of the weather were the abnormally high temperature prevailing from September 29th to October 4th; the reading for October 1st being 78°F. , and the sudden intense cold which marked the end of the year.

A *Mean Pressure* of 29.984 inches at normal temperature and mean sea level has been recorded as against 29.923 inches for 1907. March being lowest with 29.811 inches, December next

with 29·857 inches, October being highest with 30·149 inches, January coming next with 30·106 inches. The extreme range of pressure was 2·011 inches as compared with 2·470 inches for 1907, and 2·147 inches in 1906 ; the highest reading being taken on February 6th, at 9 p.m., and the lowest on December 10th, at 9 p.m.

Rain or Snow (0·005 inches or more) fell on 225 days, 14 more than in 1907 and 26 more than in 1906, the rainfall for the whole year being only 21·77 inches, *i.e.*, 2·73 inches below the average (24·5) for the last 65 years. It is worth re-affirming, against the defamers of our climate, that York is one of the driest places in the Kingdom ! The wettest months of the year were March, July, and May, with rainfalls amounting to 2·86 inches, 2·65 inches, and 2·36 inches respectively ; whilst October, June, and January yielded only 0·77, 0·87, and 1·20 inches respectively.

The cumulative totals for the wettest month since 1841 are now October 184·28 inches, August 180·89 inches, and July 168·72 inches. The heaviest rainfall occurred on July 8th, when 0·90 in. fell.

Observations of the winds show that we have had to record during the year the occurrence of 2 “gales” and “strong” winds on 43 days, 15 days during the year being “calm.” The chief air-currents were S. (207), W. (144), S.W. (70), N. (94), N.W. (55), E. (50).

Days of “clear” sky numbered 49 as against 42 in 1907, “overcast” 130 as against 120 in 1907, and 14 days were marked by thunderstorms. Snow fell on 25 days, all but 2 being in the early months, and fog prevailed on 36 days, chiefly at the end of the year.

It is sad to have to record that sunshine again fell off from 1265·3 hours to 1259·0, a drop from 29% to 28% of possible sunshine.

In a paper read before the British Association in Dublin by Sir John W. Moore, M.D. on “Is our Climate changing?” the writer came to the conclusion that “there is no evidence at all, from observations taken over six centuries, that any appreciable change has taken place in the climate of the British Isles.”

THE OBSERVATORY.—The Equatorial Telescope is in very good condition, especially as Mr. Scott took it apart and cleaned it up in August last. The old Sheepshanks' instrument, which had been lent to the Scientific Department of the Franco British Exhibition last year, is back again in its place.

ORNITHOLOGY.—The collections have had several additions made to them during the past year, both with regard to stuffed specimens and skins, and also to the aviaries in the gardens; a large part of the fine collection of skins of European birds, presented by Mr. James Backhouse some years ago, has been overhauled and re-cleaned by the Curator.

ZOOLOGY.—Additions continue to be made both to the collection of skins of British mammals, and also to the series of stuffed specimens of the smaller species of Yorkshire mammals, several rare and interesting specimens having been presented to the Society during the past year. The fine collections of mammal skeletons and preserved freshwater fish are in excellent condition.

FIELD NATURALISTS' SECTION.—The Committee of this section is pleased to report that the affairs of the section are in a most flourishing condition. We have to thank the Council of the Yorkshire Philosophical Society for stepping into the breach at a critical moment of our career, and by their able support assisting us to carry through a scheme of re-construction that has proved most satisfactory in its working. Old members have inscribed their names for re-election, so that in eleven months the membership of the York and District Field Naturalists' Section of the Yorkshire Philosophical Society is only eight names short of the number upon the roll before the re-construction took place. Your Committee are confident the step taken has in every way proved to have been a wise one that will result in the extension of the interest in our work already shewn by a large number of local Naturalists.

During the Summer of 1908, excursions were arranged to work certain grounds within a twenty-mile radius of York, the various sections represented undertaking to verify the lists of

the fauna and flora previously recorded, and many interesting specimens came under notice. An addition to Robinson's East Riding Flora was made by the discovery, at Buttercrambe, of the Marsh St. John's Wort, by Miss Helen Leach; and on the excursion to Kirkham Abbey and Firby Woods, Mr. Fowler Jones discovered two species of fungus, new to the county, *Poilocybe agraria* and *Rossula serotina*, the latter being pointed out by Mr. Charles Crossland as particularly worthy of notice as being one of the least of British *Rossulæ*. Numerous lectures and ten-minute papers have been given during the past season.

The Recorder's reports are not yet read as we go to press, but your Secretaries are informed they are in an advanced stage, and will all be read at the next meeting.

The Section's Library has been carefully catalogued by its Honorary Librarian, Miss Helen Leach, and most of the books have been marked in sunk gilt letters as being the property of the Society; members have made the fullest calls upon its capacity, and shewn a genuine interest to learn more by careful perusal of its scientific treasures. Several excellent works have been added by purchase, and others have been presented.

THE PHOTOGRAPHIC SECTION.—In the Spring half of the year, there were a few very well attended meetings, notably when Mr. A. Pearson, of Leeds, gave a most interesting lecture on the Lumière process of colour photography, and when Dr. Tempest Anderson gave an address upon the best lines of procedure for practical photographers to adopt when working in tropical countries. It is in such cases that a few hints from an experienced amateur may save a novice a large wastage in plates, and other disappointments. In May, Mr. Rutherford gave a very interesting lantern lecture on "A Trip through the Mediterranean." The attendance of members during the Autumn half of the year fell off very seriously, leaving very little encouragement for the continuation of the Section, whose existence depends so intimately upon its being supported by amateurs who are doing some active work, which unfortunately does not now seem to be the case.

METEOROLOGICAL STATION, YORK.—THE MUSEUM.

Longitude 1° 5' W., Latitude 53° 57' N. Height above Mean Sea Level 56 ft. Gravity Correction + .024 in.

| Mean Pressure at 32° Fahrenheit. | | | Air Temperature. | | | | | | Humidity. | | | | | | Earth Temp. | | |
|-------------------------------------|----------------------|--------|------------------|-------|----------|------|----------------------------------|------------------------|--------------|--------------------|-------------|--------------------|--------|-------------|----------------|-------------|-------------|
| At M.S. Level | At Station Level. | 9 a.m. | 9 p.m. | Mean. | Means of | | Min. & Max. Com- bined. | Absolute Min. and Max. | | Depn. of Wet Bulb. | | Tension of Vapour. | | Percentage. | | At 1 ft. | At 4 ft. |
| | | | | | Min. | Max. | | Min. | Max. | Day. | Day. | 9 a.m. | 9 p.m. | Mean. | 9 a.m. | | |
| ins. | ins. | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | in. | in. | % | % | ° | ° |
| Jan. | 30.106 | 30.048 | 36.9 | 36.3 | 31.7 | 42.2 | 37.0 | 22. | 4th | 56. | 17th | 0.8 | 0.9 | .195 | .201 | 93 | 36.7 40.8 |
| Feb. | 29.994 | 29.936 | 40.2 | 40.4 | 35.9 | 47.2 | 41.6 | 29. | 2nd | 54. | 10th | 1.6 | 1.9 | .216 | .213 | 88 | 38.3 40.2 |
| Mar. | 29.811 | 29.753 | 38.3 | 38.5 | 33.6 | 45.9 | 39.8 | 23. | 21st | 56. | 8th | 1.9 | 1.6 | .194 | .203 | 84 | 38.6 40.3 |
| April | 29.973 | 29.915 | 43.2 | 42.6 | 36.8 | 49.8 | 43.3 | 23. | 24th | 60. | 8th | 2.5 | 2.1 | .226 | .224 | 81 | 43.2 42.8 |
| May | 29.964 | 29.906 | 55.4 | 53.9 | 46.4 | 63.3 | 54.9 | 39. | 22, 23 | 76. | 27th | 3.5 | 2.6 | .344 | .326 | 78 | 50.9 47.1 |
| June | 30.089 | 30.031 | 58.8 | 57.1 | 48.7 | 66.4 | 57.6 | 40. | 22nd | 79. | 3rd | 4.9 | 3.0 | .355 | .355 | 72 | 56.5 52.1 |
| July | 29.987 | 29.929 | 61.6 | 60.3 | 52.9 | 68.9 | 60.9 | 45. | 8th | 84. | 2nd | 4.6 | 3.2 | .403 | .402 | 74 | 59.8 55.4 |
| Aug. | 29.956 | 29.898 | 59.0 | 57.5 | 50.0 | 65.9 | 58.0 | 40. | 12th | 78. | 3rd | 3.8 | 2.5 | .385 | .377 | 77 | 58.7 56.8 |
| Sept. | 29.921 | 29.863 | 56.3 | 55.5 | 48.4 | 63.9 | 56.2 | 36. | 12th | 80. | 30th | 2.7 | 2.1 | .377 | .369 | 83 | 55.4 55.0 |
| Oct. | 30.149 | 30.091 | 51.8 | 52.1 | 46.7 | 60.5 | 53.6 | 30. | 25th | 78. | 1st | 1.1 | 0.9 | .356 | .369 | 92 | 54.2 51.5 |
| Nov. | 30.006 | 29.948 | 43.7 | 44.1 | 39.2 | 50.6 | 44.9 | 26. | 8th | 57. | 12, 22 | 1.4 | 1.2 | .254 | .265 | 88 | 46.8 50.2 |
| Dec. | 29.857 | 29.799 | 37.4 | 38.0 | 33.9 | 42.5 | 38.2 | 13. | 30th | 50. | 20th | 0.4 | 0.5 | .215 | .224 | 96 | 41.5 45.6 |
| Year | 29.984 | 29.926 | 48.4 | 48.0 | 42.0 | 55.6 | 48.8 | 13. | Dec. 30th | 84. | July 2nd | 2.4 | 1.9 | .293 | .294 | 84.0 | 48.4 48.4 |

STATION, YORK.—THE MUSEUM.

Heights above Ground :—Barometer, 3 feet ; Thermometers, 4 feet ; Rain-gauge, 1 foot.

| 1908. | Amount of Cloud. | | | Rainfall. | | | Weather, No. of Days of | | | | | | | | | Wind, No. of Observations of | | | | | | | | |
|-------|------------------|--------|------|--------------|-------------|--------|-------------------------|-------|-------|---------|------------|------------|------|-------|-------------------|------------------------------|------|----|------|-----|------|-----|------|-------|
| | 9 a.m. | 9 p.m. | Mean | Total. | Max. | Day. | Rain. | Snow. | Hail. | Thunder | Clear Sky. | Over-cast. | Fog. | Gale. | Strong (Wind 4-7) | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. | Calm. |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Jan. | 7.0 | 5.5 | 6.3 | ins. 1.20 | ins. .40 | 8th | 18 | 4 | 0 | 0 | 7 | 14 | 8 | 1 | 5 | 6 | 0 | 4 | 2 | 24 | 4 | 15 | 5 | 2 |
| Feb. | 6.4 | 5.8 | 6.1 | 1.69 | .44 | 16th | 17 | 4 | 0 | 0 | 3 | 9 | 3 | 1 | 7 | 7 | 0 | 0 | 0 | 9 | 7 | 27 | 8 | 0 |
| Mar. | 5.8 | 6.3 | 6.1 | 2.86 | .60 | 25th | 21 | 6 | 1 | 0 | 5 | 12 | 2 | 0 | 7 | 11 | 7 | 6 | 6 | 17 | 4 | 4 | 7 | 0 |
| April | 7.2 | 6.6 | 6.9 | 2.00 | .33 | 30th | 20 | 9 | 2 | 0 | 0 | 13 | 0 | 0 | 2 | 23 | 7 | 5 | 5 | 7 | 1 | 7 | 5 | 0 |
| May | 6.7 | 6.1 | 6.4 | 2.36 | .48 | 6th | 13 | 0 | 1 | 4 | 2 | 7 | 0 | 0 | 0 | 2 | 4 | 8 | 3 | 13 | 12 | 17 | 2 | 1 |
| June | 6.0 | 4.0 | 5.0 | 0.87 | .39 | 16th | 8 | 0 | 0 | 3 | 5 | 5 | 1 | 0 | 2 | 8 | 11 | 4 | 5 | 7 | 7 | 13 | 4 | 1 |
| July | 6.3 | 5.8 | 6.1 | 2.65 | .90 | 8th | 14 | 0 | 0 | 3 | 4 | 8 | 0 | 0 | 2 | 7 | 6 | 4 | 2 | 11 | 9 | 16 | 7 | 0 |
| Aug. | 6.7 | 4.8 | 5.8 | 2.02 | .49 | 20th | 16 | 0 | 1 | 3 | 4 | 10 | 0 | 0 | 8 | 12 | 1 | 4 | 2 | 4 | 9 | 24 | 6 | 0 |
| Sept. | 6.2 | 5.5 | 5.9 | 1.86 | .46 | 18, 22 | 16 | 0 | 0 | 1 | 5 | 11 | 1 | 0 | 6 | 9 | 2 | 1 | 5 | 25 | 6 | 8 | 3 | 1 |
| Oct. | 7.0 | 5.6 | 6.3 | 0.77 | .22 | 27th | 17 | 0 | 0 | 0 | 5 | 12 | 7 | 0 | 0 | 5 | 2 | 11 | 12 | 28 | 2 | 2 | 0 | 0 |
| Nov. | 6.2 | 7.2 | 6.7 | 1.62 | .36 | 13th | 13 | 0 | 0 | 0 | 4 | 13 | 3 | 0 | 3 | 4 | 1 | 3 | 8 | 22 | 6 | 7 | 5 | 4 |
| Dec. | 7.2 | 7.5 | 7.4 | 1.87 | .52 | 10th | 27 | 2 | 0 | 0 | 5 | 16 | 11 | 0 | 1 | 0 | 2 | 0 | 4 | 40 | 3 | 4 | 3 | 6 |
| Year | 6.6 | 5.9 | 6.3 | 21.77 | .90 | 8th | 200 | 25 | 5 | 14 | 49 | 130 | 36 | 2 | 43 | 94 | 43 | 50 | 54 | 207 | 70 | 144 | 55 | 15 |

RIVER HEIGHT RECORDS REGISTERED BY THE AUTOMATIC RECORDER
AT THE GUILDHALL, YORK, 1908.

| Date. | JANUARY. | | FEBRUARY. | | MARCH. | | APRIL. | | MAY. | | JUNE. | |
|-------|----------|---------------------|-----------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|
| | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. |
| 1 | 9 a.m. | ft. in. 1 | noon | ft. in. 1 | 12 p.m. | ft. in. 1 | 1 a.m. | ft. in. 4 | 1 p.m. | ft. in. 5 | noon | ft. in. S.L. |
| 2 | " | 2 | 1 a.m. | 1 | noon | 1 | " | 2 | 1 a.m. | 3 | " | S.L. |
| 3 | " | 1 | 12 p.m. | 0 | " | 1 | " | 1 | " | 1 | 1 a.m. | S.L. |
| 4 | " | 1 | noon | 1 | " | 1 | 3 p.m. | 2 | " | 0 | 6 p.m. | 2 |
| 5 | " | 1 | 1 a.m. | 1 | 2 p.m. | 1 | 1 a.m. | 2 | 6 p.m. | 2 | 1 a.m. | 0 |
| 6 | " | 1 | noon | 0 | 12 p.m. | 2 | 6 p.m. | 2 | " | 4 | " | 0 |
| 7 | 12 p.m. | 3 | " | 0 | 6 p.m. | 4 | 5 p.m. | 2 | 1 a.m. | 3 | " | 0 |
| 8 | 2 p.m. | 7 | " | 0 | 2 a.m. | 4 | 1 a.m. | 1 | " | 1 | " | 0 |
| 9 | 2 a.m. | 6 | " | 0 | 12 p.m. | 10 | 1 a.m. | 1 | " | 1 | 10 a.m. | S.L. |
| 10 | 1 a.m. | 4 | 10 a.m. | 0 | 9 a.m. | 10 | 6 p.m. | 1 | " | 2 | noon | below 0 |
| 11 | noon | 3 | 12 p.m. | 0 | 1 a.m. | 10 | " | 1 | " | 1 | " | 0 |
| 12 | " | 2 | 10 a.m. | 0 | " | 7 | 12 p.m. | 0 | noon | 0 | " | 0 |
| 13 | " | 2 | 1 a.m. | 0 | " | 3 | 1 a.m. | 0 | 12 p.m. | 0 | " | 0 |
| 14 | " | 2 | " | 0 | " | 2 | noon | 0 | 9 p.m. | 1 | 10 a.m. | 2 |
| 15 | " | 2 | 12 p.m. | 3 | " | 1 | " | 0 | 12 p.m. | 1 | 6 a.m. | above 1 |
| 16 | 12 p.m. | 5 | 5 a.m. | 4 | 3 a.m. | 1 | " | 0 | noon | 2 | 1 a.m. | 0 |
| 17 | 1 a.m. | 5 | 1 a.m. | 1 | 1 a.m. | 0 | " | 0 | 1 a.m. | 1 | noon | S.L. |
| 18 | " | 3 | 12 p.m. | 2 | noon | 0 | 1 a.m. | 0 | 12 p.m. | 0 | " | S.L. |
| 19 | " | 3 | 8 a.m. | 2 | " | 0 | " | 0 | 2 p.m. | 2 | 4 p.m. | 0 |
| 20 | " | 3 | 1 a.m. | 1 | " | 0 | " | 0 | 1 a.m. | 1 | 1 a.m. | 0 |
| 21 | noon | 2 | 9 p.m. | 1 | 12 p.m. | 0 | noon | 0 | " | 0 | " | S.L. |
| 22 | " | 2 | 5 p.m. | 1 | noon | 0 | 2 p.m. | 0 | noon | 0 | noon | below 0 |
| 23 | " | 2 | 2 p.m. | 6 | 6 p.m. | 0 | noon | 0 | 8 a.m. | 0 | " | 0 |
| 24 | " | 2 | 1 a.m. | 4 | " | 1 | " | 0 | noon | 0 | " | 0 |
| 25 | " | 2 | 3 p.m. | 1 | 12 p.m. | 3 | " | 0 | " | 0 | " | 0 |
| 26 | " | 2 | 6 p.m. | 1 | 8 p.m. | 7 | 12 p.m. | 0 | " | 0 | 9 p.m. | 0 |
| 27 | " | 4 | 1 a.m. | 1 | 12 p.m. | 4 | 6 p.m. | 1 | " | 0 | 12 p.m. | 0 |
| 28 | 7 p.m. | 3 | " | 1 | 3 p.m. | 2 | " | 1 | " | 0 | " | water off. |
| 29 | 12 p.m. | 2 | " | 1 | 1 a.m. | 3 | " | 1 | 1 a.m. | 0 | " | " |
| 30 | 6 p.m. | 2 | " | 0 | noon | 3 | 2 p.m. | 1 | noon | 0 | 12 p.m. | 0 |
| 31 | 1 a.m. | 2 | 10 p.m. | 4 | 10 p.m. | 2 | " | 1 | " | S.L. | " | 5 |

RIVER HEIGHT RECORDS.—Continued.

| Date. | JULY. | | AUGUST. | | SEPTEMBER. | | OCTOBER. | | NOVEMBER. | | DECEMBER. | |
|-------|---------|---------------------|---------|---------------------|---------------------|---------------------|----------|---------------------|-----------|---------------------|-----------|---------------------|
| | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. | Time. | Above or below S.L. |
| 1 | 12 p.m. | ft. in. below 0 | 1 a.m. | ft. in. below 0 | 12 p.m. | ft. in. 2 | 1 p.m. | ft. in. 0 | 5 p.m. | ft. in. 9 | 1 a.m. | ft. in. 2 |
| 2 | " noon | S.L. 4 | " noon | S.L. 4 | 6 a.m. | 2 | noon | 0 | 1 a.m. | 8 | 6 p.m. | 1 |
| 3 | " | 0 | " | 0 | 1 a.m. | 2 | 1 a.m. | 0 | " | 3 | 3 p.m. | 1 |
| 4 | " | 0 | " | 0 | " | 1 | noon | 0 | " | 1 | 1 p.m. | 2 |
| 5 | " | 0 | " | 0 | " | 1 | 4 p.m. | S.L. | " | 1 | 11 p.m. | 6 |
| 6 | " | 0 | " | 0 | " | 0 | noon | 0 | 12 p.m. | 0 | 10 p.m. | 2 |
| 7 | 5 p.m. | 0 | " | 0 | " | 0 | " | 0 | 6 p.m. | 0 | 1 a.m. | 2 |
| 8 | 1 a.m. | 0 | " | 0 | " | 0 | " | 0 | noon | 0 | 12 p.m. | 7 |
| 9 | 12 p.m. | S.L. 6 | " | 0 | 12 p.m. | 2 | " | 0 | " | 0 | " | 9 |
| 10 | noon | S.L. 6 | " | 0 | 6 a.m. | 3 | " | 0 | " | 0 | 3 a.m. | 9 |
| 11 | 1 a.m. | S.L. 6 | " | 0 | 11 a.m. | 1 | " | 0 | 1 a.m. | 0 | 1 a.m. | 3 |
| 12 | 8 p.m. | above 1 | " | 0 | recorder stopped. | 1 | 1 a.m. | S.L. 5 | 12 p.m. | 0 | " | 8 |
| 13 | 1 a.m. | 1 | " | 0 | " | " | noon | S.L. 3 | " | 3 | " | 6 |
| 14 | 12 p.m. | 0 | " | 0 | 9 a.m. | 0 | " | S.L. 2 | 4 a.m. | 3 | 10 p.m. | 4 |
| 15 | 6 a.m. | 0 | " | 0 | " | 0 | " | S.L. 4 | 1 a.m. | 1 | 12 p.m. | 3 |
| 16 | 1 a.m. | 0 | " | 0 | " | 0 | " | S.L. 11 | 5 a.m. | 1 | " | 2 |
| 17 | " | S.L. 3 | " | 0 | " | 1 | 1 a.m. | S.L. 6 | noon | 0 | noon | 2 |
| 18 | 3 p.m. | 6 | " | 0 | " | 2 | noon | S.L. 3 | 12 p.m. | 1 | " | 2 |
| 19 | 1 a.m. | 1 | " | 0 | " | 1 | " | S.L. 7 | " | 0 | " | 2 |
| 20 | 3 p.m. | 0 | " | 0 | 12 p.m. | 0 | " | S.L. 8 | 6 p.m. | 0 | 12 p.m. | 5 |
| 21 | 12 p.m. | S.L. 3 | " | 0 | " | 5 | 5 p.m. | 3 | 12 p.m. | 0 | 4 p.m. | 8 |
| 22 | 1 a.m. | S.L. 6 | " | 0 | 1 a.m. | 4 | 1 a.m. | 1 | 9 p.m. | 0 | 1 a.m. | 7 |
| 23 | noon | below 0 | " | 0 | 1 p.m. | 0 | 1 a.m. | 1 | 12 p.m. | 3 | 12 p.m. | 2 |
| 24 | " | 0 | " | 0 | 11 p.m. | 11 | " | 0 | 4 a.m. | 3 | noon | 2 |
| 25 | " | 0 | " | 0 | 1 p.m. | 8 | " | 0 | 1 a.m. | 1 | " | 2 |
| 26 | " | 0 | " | 0 | 1 a.m. | 11 | noon | 0 | 12 p.m. | 1 | " | 2 |
| 27 | " | 0 | 1 a.m. | 0 | " recorder stopped. | 0 | " | 0 | " | 1 | " | 2 |
| 28 | " | 0 | 12 p.m. | above 1 | 2 p.m. | 1 | 12 p.m. | 0 | " | 3 | 9 a.m. | 1 |
| 29 | " | 0 | " noon | 1 | 12 p.m. | 0 | " | 2 | 7 p.m. | 5 | noon | 1 |
| 30 | " | 0 | " | 1 | " | 0 | 8 a.m. | 2 | 2 p.m. | 4 | 9 a.m. | 0 |
| 31 | " | 0 | " | 1 | " | 0 | 10 a.m. | 0 | 1 a.m. | 5 | " | 0 |

YORK—THE MUSEUM.
BAROMETER AT 32° AND M.S.L.

| 1907. | Highest Barometer. | Lowest Barometer. |
|-----------|----------------------------|-----------------------------|
| January | 30·564 20th, 9 p.m. | 29·037 8th, 9 a.m. |
| February | 30·682 6th, 9 p.m. | 29·002 28th, 9 p.m. |
| March | 30·277 14th, 9 p.m. | 29·009 9th, 9 p.m. |
| April | 30·495 7th, 9 a.m. | 29·425 24th, 9 a.m. |
| May | 30·581 28th, 9 a.m. | 29·281 6th, 9 a.m. |
| June | 30·472 27th, 9 a.m. | 29·483 13th, 9 p.m. |
| July | 30·466 29th, 9 a.m. | 29·273 17th, 9 a.m. |
| August | 30·398 2nd, 9 p.m. | 29·213 31st, 9 p.m. |
| September | 30·215 5th, 9 a.m. | 29·087 1st, 9 a.m. |
| October | 30·563 22nd, 9 a.m. | 29·853 10th, 9 a.m. |
| November | 30·445 30th, 9 p.m. | 29·181 22nd, 9 p.m. |
| December | 30·426 1st, 9 a.m. | 28·671 10th, 9 p.m. |
| Year | 30·682 Feb. 6th, 9 p.m. | 28·671 Dec. 10th, 9 p.m. |

YORK (BOOTHAM)—SUNSHINE VALUES.

| Month. | Total Hours. | Percentages. | |
|-----------|--------------|--------------|-------|
| | 1908. | 1908. | 1907. |
| January | 43 | 18 | 21 |
| February | 70 | 25 | 29 |
| March | 101 | 28 | 43 |
| April | 113 | 27 | 33 |
| May | 152 | 31 | 23 |
| June | 200 | 40 | 27 |
| July | 169 | 33 | 28 |
| August | 165 | 36 | 33 |
| September | 119 | 32 | 42 |
| October | 85 | 26 | 24 |
| November | 39 | 16 | 21 |
| December | 3 | 1 | 7 |
| Year | 1259 | 28 | 29 |

THE TREASURER'S ACCOUNT IN CONNECTION WITH THE FUND FOUNDED BY THE LATE
WM. REED, ESQ., FOR SPECIFIC PURPOSES.

| Dr. | INCOME. | | EXPENDITURE. | | Cr. |
|------------------------------------------------------------------------|---------|----------------|-------------------|-----|----------------|
| | | & s. d. | | | £ s. d. |
| Interest on £600 York Corporation 3% Redeemable Stock, less Income Tax | ... | 17 2 0 | Books and Binding | ... | 18 7 0 |
| Interest on £50 placed on deposit at York City and County Bank | ... | 1 5 0 | | | |
| | | <u>£18 7 0</u> | | | <u>£18 7 0</u> |

19

| BALANCE SHEET. | | |
|---------------------------------------------------------|----------|------------------|
| | £ s. d. | £ s. d. |
| Amount of Fund on 31st Dec., 1908 | 687 19 2 | |
| | ... | |
| | ... | |
| Amount invested in York Corporation 3% Redeemable Stock | ... | 600 0 0 |
| Amount placed on Deposit at York City and County Bank | ... | 50 0 0 |
| Cash at Bankers in General Account | ... | 37 19 2 |
| | | <u>£687 19 2</u> |

5th February, 1909.

Examined and found correct,

PHILIP L. NEWMAN.

EDWIN GRAY, Hon. Treasurer.

THE TREASURER IN ACCOUNT WITH THE YORKSHIRE

| Dr. | | | | | | INCOME. | | | | | |
|-------------------------------------------------------------------------|-----|-----|-----|-----|-----|---------|-----|-----|-------|----|----|
| Subscriptions : | | | | | | £ | s. | d. | £ | s. | d. |
| Town Members | ... | ... | ... | ... | ... | 618 | 0 | 0 | | | |
| Country Members | ... | ... | ... | ... | ... | 14 | 1 | 0 | | | |
| Temporary Members... | ... | ... | ... | ... | ... | ... | ... | ... | | | |
| Lady Subscribers | ... | ... | ... | ... | ... | 69 | 10 | 0 | | | |
| Associates | ... | ... | ... | ... | ... | 17 | 10 | 0 | | | |
| Arrears received | ... | ... | ... | ... | ... | 32 | 5 | 0 | | | |
| Keys of Gates... | ... | ... | ... | ... | ... | 62 | 3 | 6 | | | |
| | | | | | | | | | 813 | 9 | 6 |
| Donations : | | | | | | | | | | | |
| Sundry Donations towards cost of Cage for Squirrels, etc. | ... | ... | ... | ... | ... | 3 | 15 | 0 | | | |
| Dr. Tempest Anderson—Donation towards purchase of Cases and Specimens | ... | ... | ... | ... | ... | 20 | 0 | 0 | | | |
| | | | | | | | | | 23 | 15 | 0 |
| Rents : | | | | | | | | | | | |
| Major Allenby, St. Mary's Lodge | ... | ... | ... | ... | ... | 65 | 0 | 0 | | | |
| Mr. Hill, Marygate Baths | ... | ... | ... | ... | ... | 40 | 0 | 0 | | | |
| York Amateur Rowing Club | ... | ... | ... | ... | ... | 5 | 0 | 0 | | | |
| York and District Field Naturalists' Society, less £2 paid to Attendant | ... | ... | ... | ... | ... | 1 | 0 | 0 | | | |
| York Waterworks Co., for Shed | ... | ... | ... | ... | ... | 5 | 0 | 0 | | | |
| Do. for Light | ... | ... | ... | ... | ... | 0 | 1 | 0 | | | |
| Corporation of York—Lease of Exhibition Land | ... | ... | ... | ... | ... | 2 | 0 | 0 | | | |
| Yorkshire School for the Blind, for Light | ... | ... | ... | ... | ... | 0 | 1 | 0 | | | |
| National Telephone Co., for Wayleave | ... | ... | ... | ... | ... | 1 | 0 | 0 | | | |
| Post Office, for Wayleave | ... | ... | ... | ... | ... | 0 | 1 | 0 | | | |
| York University Extension Society | ... | ... | ... | ... | ... | 2 | 2 | 0 | | | |
| York & District Teachers' Association | ... | ... | ... | ... | ... | 0 | 4 | 6 | | | |
| | | | | | | | | | 121 | 9 | 6 |
| Whitsuntide Admission Fees | ... | ... | ... | ... | ... | 11 | 18 | 10 | | | |
| Less: Attendants and Police | ... | ... | ... | ... | ... | 5 | 0 | 0 | | | |
| Fixing of Barricades | ... | ... | ... | ... | ... | 0 | 6 | 6 | | | |
| | | | | | | | | | 5 | 6 | 6 |
| | | | | | | | | | 6 | 12 | 4 |
| Meteorological Department : | | | | | | | | | | | |
| Grant from Corporation of York | ... | ... | ... | ... | ... | | | | 5 | 0 | 0 |
| Sale of Catalogues, Plans and Reports | ... | ... | ... | ... | ... | | | | 6 | 1 | 6 |
| Sale of Photographs | ... | ... | ... | ... | ... | | | | 2 | 12 | 0 |
| Bank Interest | ... | ... | ... | ... | ... | | | | 0 | 19 | 6 |
| Gate Money | ... | ... | ... | ... | ... | | | | 277 | 8 | 3 |
| Hire of Tent | ... | ... | ... | ... | ... | 6 | 10 | 0 | | | |
| Less for repairs, new stakes, etc. | ... | ... | ... | ... | ... | 1 | 16 | 3 | | | |
| | | | | | | | | | 4 | 13 | 9 |
| Interest on £918 8s. 9d. India 3% Stock, less Income Tax | | | | | | | | | 26 | 3 | 8 |
| | | | | | | | | | 1288 | 5 | 0 |
| Excess of Expenditure over Income | ... | ... | ... | ... | ... | | | | 81 | 6 | 6 |
| | | | | | | | | | £1369 | 11 | 6 |
| Balance in hands of the Treasurer, 31st December, 1908 | | | | | | | | | 12 | 5 | 6 |
| | | | | | | | | | £12 | 5 | 6 |

Examined and found correct,
 PHILIP L. NEWMAN,
 5th Feb., 1909.

EDWIN GRAY,
 Hon. Treasurer.

PHILOSOPHICAL SOCIETY FOR YEAR ENDING 31ST DEC., 1908.

| | EXPENDITURE. | | | | | | Cr. | | |
|----------------------------------------------------------------|--------------|----|----|---|----|-----|-------|----|----|
| | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| Crown Rent | | | | | | | 1 | 0 | 0 |
| Corporation Rent | | | | | | | 19 | 2 | 6 |
| <i>Rates and Taxes :</i> | | | | | | | | | |
| Property Tax and City Rates | | | | | | 42 | 10 | 5 | |
| Waterworks Company's Rate | | | | | | 8 | 0 | 1 | |
| Gardeners' Licenses | | | | | | 3 | 0 | 0 | |
| Receipt and Cheque Books Stamping | | | | | | 2 | 1 | 4 | |
| | | | | | | | 55 | 11 | 10 |
| <i>Insurance :</i> | | | | | | | | | |
| Fire Premium | | | | | | 7 | 5 | 0 | |
| Employers' Liability Premium | | | | | | 2 | 7 | 0 | |
| | | | | | | | 9 | 12 | 0 |
| <i>Salaries and Wages :</i> | | | | | | | | | |
| Museums | | | | | | 324 | 10 | 0 | |
| Lodge and Gardens | | | | | | 274 | 8 | 4 | |
| | | | | | | | 598 | 18 | 4 |
| *Yorkshire Insurance Company, Annuity | | | | | | | 199 | 0 | 10 |
| <i>General Additions, Repairs, and Expenses :</i> | | | | | | | | | |
| Mr. Backhouses' Cases and Specimens | | | | | | 100 | 0 | 0 | |
| Museum and Hospitium | | | | | | 25 | 12 | 2 | |
| Estate | | | | | | 44 | 16 | 0 | |
| Gardens | | | | | | 40 | 13 | 6 | |
| | | | | | | | 211 | 1 | 8 |
| Library—Books and Binding | | | | | | | 15 | 17 | 6 |
| Lectures | | | | | | | 59 | 11 | 10 |
| Printing and Stationery | | | | | | | 6 | 10 | 4 |
| Printing Communications to Members, and Postage of same | | | | | | | 10 | 14 | 10 |
| Printing Reports and Postage thereof | | | | | | | 38 | 19 | 9 |
| <i>Gas, Coal, and Coke :</i> | | | | | | | | | |
| Museums | | | | | | 38 | 2 | 0 | |
| Gardens | | | | | | 19 | 15 | 11 | |
| Estate | | | | | | 20 | 10 | 10 | |
| | | | | | | | 78 | 8 | 9 |
| Antiquities, Coins and Pottery | | | | | | | 28 | 5 | 7 |
| Zoological Department | | | | | | | 8 | 16 | 3 |
| Meteorological Department | | | | | | | 15 | 14 | 3 |
| Preparation of Photographs for sale | | | | | | | 0 | 7 | 1 |
| Printing of Plans for Sale | | | | | | | 1 | 14 | 0 |
| Sundry Postages | | | | | | | 9 | 3 | 11 |
| Sundries, including Carriage of Parcels | | | | | | | 1 | 0 | 3 |
| | | | | | | | £1369 | 11 | 6 |
| Balance in hands of the Treasurer, 31st December, 1907 | | | | | | | 93 | 12 | 0 |
| Excess of Expenditure over Income, 1908 | | | | | | | 81 | 6 | 6 |
| | | | | | | | £12 | 5 | 6 |

* Annuity of £201 8s. 0d. payable until October, 1914, inclusive, created to repay an advance of £3500 made by the Yorkshire Insurance Co. Ltd.

| | | | | | | |
|------------------|-----|-----|-----|--------------|----------|----------|
| Principal repaid | ... | ... | ... | 2435 | 3 | 11 |
| „ outstanding | ... | ... | ... | 1064 | 16 | 1 |
| | | | | <u>£3500</u> | <u>0</u> | <u>0</u> |

NEW MEMBERS ELECTED, 1908.

- Addison, Miss, Bootham House School.
 Boothroyd, A., Mylor House, Acomb.
 Brown, G. Laycock, Edinbro' Cottage, Heworth.
 Brown, Rhodes, Davygate.
 Bruce, J. E., Wharfedale, Clifton Dale.
 Bullivant, Wm., St. Sampson's Square.
 Fairclough, W. C., Trevelyan House, Bishopthorpe Road.
 Gayner, Dr. John S., Hall Cottage, New Earswick.
 Hardcastle, C. A., St. Hilary's, Clifton Dale.
 Hudson, Mrs. M., 4, Warwick Gardens, Kensington.
 Jackson, Lawrence, Bootham.
 Kirby, G. Potter, 29, St. Mary's.
 Lindberg, Major T. H., Clifton.
 Lofthouse, Alfred, 3, Little Stonegate.
 Mends, Colonel, C.B., Morton House, Clifton.
 Mennim, F., 26, Avenue Terrace.
 Monkhouse, Thos. Allen, 14, Queen Anne's Road.
 Page, A. Finch, 10, Clifton Dale.
 Rowntree, Mr. J. S., Mount Villas.
 Saxby, Frederick, 29, Markham Crescent.
 Scaife, G. A., 7, Feversham Crescent.
 Shepherd, T. W., 29, Railway Street.
 Stroud, Jas. L., 43, Coney Street.
 Sturdy, Mrs. Ann, 5, Carlton Terrace.
 Swale, T. G., 9, St. Mary's.
 Taite, Mrs., Pinehurst, The Mount.
 Terry, F. W., Brantwood, The Avenue, Clifton.
 Veale, Chas. V., 12, Sycamore Terrace.
 Walker, J. F. E. Gelson, 45, Bootham.
 Wasling, Mrs., Petergate.
 Webb, T. F. A., Norton Holme, Burton Lane.
 Wilkie, Geo., 91, Union Terrace.
 Wootton, W. A., 21, Clifton Dale.
 Worsdell, Hy., St. Rock, Burton Lane.

NEW LADY SUBSCRIBERS.

Baker, Miss, 1, Friargate.
 Buckle, Miss, 31, Queen Anne's Road.
 Coates, Mrs, 18, Bootham Terrace.
 Fletcher, Mrs., 2, St. James' Terrace.
 Middleton, Miss, 11. South Parade.
 Munby, Miss, 31, Grosvenor Terrace.
 Newton, Miss, 43, Bootham.
 Pattison, Miss D., 27, Bootham.
 Walker, Mrs., St. Catherine's, Clifton.
 Wilkinson, Mrs., 7, The Avenue, Clifton.
 Woodward, Miss Jean F., 17, Sycamore Terrace.

NEW ASSOCIATE.

Hill, Rev. W. N., 79, Monkgate.

DEATHS.

MEMBERS.

Clegg, Mark, Burton Lane.
 Creyke, Ralph, Rawcliffe Hall.
 Fleming, Canon, York.
 Gramshaw, F. S., M.D., Bootham.
 Sowden, T. H., The Avenue, Clifton.
 Taite, W. A., Pinehurst, The Mount.
 Taylor, Edward, The Sycamores, Bootham Terrace,
 Thorp, Mrs., Park Grove.
 Weaver, Miss, Bootham House.

LADY SUBSCRIBER.

Munby, Mrs., Bootham.

RESIGNATIONS.

28 Members.
 2 Lady Subscribers.
 2 Associates.

DONATIONS TO MUSEUM AND LIBRARY.

LIBRARY.

| BOOKS PRESENTED. | DONORS. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| The Quarterly Journal of the Geological Society of London, Vol. lxiv., 1908. | The Society. |
| Transactions of the Royal Society of Edinburgh, Vol. xlv., Part 4. Vol. xlvi., Part 1. Proceedings, Vol. xxviii., Nos. 1, 2, 3, 4, 5, 6, 8, 9. | The Society. |
| Transactions of the Zoological Society of London, Vol. xviii., Parts 2, 3, and Proceedings for 1907-8, 3 parts. | The Society. |
| Guide to the Fossil Invertebrate Animals in the British Museum, List of British Seed Plants and Ferns, and Memorials of Linnæus. | The Trustees British Museum. |
| Memoirs of the Geological Survey of India "Palæontologia Indica." Series xv., Vol. v., Memoir 2; New series, Vol. ii., No. 3; Vol. xxxiv., Part 4; Vol. xxxvi., Part 2, and Records Vol. xxxvi., Parts 1, 2, 3, 4; Vol. xxxvii., Part 1. | The Indian Survey. |
| The Report of the British Association for the Advancement of Science, Leicester, 1907. | The Association. |
| Transactions of the Linnean Society, Zoology, Vol. ix, Part 14; Vol. x., Part 8; Vol. xii., Parts 2, 3. Botany Vol. vii., Parts 6, 7, 8, 9. Journal, Zoology, Vol. xxx., Nos. 197, 198; Vol. xxxi., Nos. 203, 204; Botany, Vol. xxxviii., Nos. 265, 266, 267. | Dr. Tempest Anderson. |

- Annual Reports of the Smithsonian Institution for 1906-1907. } The Institution.
- Annual Report of Bureau of American Ethnology, 1904-5, and Bulletin Nos. 33, 35. } The Bureau.
- Physical Observations, Part 2, of the National Antarctic Expedition. } Rev. Prof. Bonney.
- The Geology and Ore Deposits of the Cœur D'Alene district, Idaho, and Bulletins of the United States Geological Survey, Nos. 328, 335, 337, 338, 340, 343, 345, 346, 347, 348, 349, 350, 351, 369, also Water Supply Papers, Nos. 219, 220, 222. } The United States Survey.
- An Account of the Crustacea of Norway, Vol. v., Parts 21, 22, 23, 24, by Prof. G. O. Sars. } The Author.
- Memoirs of the Russian Geological Society, Vol. 32, by Prof. A. Michalski; Vol. 34, by Prof. Von. S. Czarnocki; Vol. 35, by Prof. Bogdanowitsch; Vol. 22, by Prof. Nikitin. Memoirs, Nos. 28, 30, 37, 41, 42, and Bulletin Vol. xxv., No. 10; Vol. xxvi., Nos. 5, 6, 7; Vol. xxvii., No. 1, also Nos. 1, 2, 3, 4, 8, 9, 10. } The Society.
- A large series of Vols. of the Philosophical Transactions of the Royal Society. } Prof. T. G. Bonney.
- Memoirs of the Manchester Literary and Philosophical, Vol. 52, Parts 1, 2, 3. } The Society.
- The 18th and 19th Reports of the Missouri Botanic Garden, 1907 and 1908. } The Council.
- Bulletin of the American Geographical Society, Vol. xxxix., No. 12; Vol. xl., Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11. } The Society.

- Transactions of the Leicester Literary
and Philosophical Society, Vol. xi.,
Part 2, Vol. xii., Parts 1, 2. } The Society.
- Journal of the Manchester Geographical
Society, Vol. xxiii., Parts 3, 4; Vol.
xxiv., Part 1. } The Society.
- Transactions of the Natural History
Society of Northumberland, Durham,
and Newcastle-upon-Tyne, Vol. iii.,
Part 1. } The Society.
- Transactions and Proceedings of the
Perthshire Society of Natural Science,
Vol. iv., Part 5. } The Society.
- Transactions of the Wisconsin Academy
of Sciences, Arts, and Letters, Vol.
xv., Part 2. } The Society.
- Annals of the New York Academy of
Sciences, Vol. xvii., Part 3, Vol.
xviii., Parts 1, 2. } The Society.
- Transactions of the Academy of Science
of St. Louis, Vol. xvi., Nos. 8, 9;
Vol. xvii., Nos. 1, 2; Vol. xviii., No. 1. } The Society.
- The Proceedings and Transactions of
the Nova Scotian Institute of Science,
Vol. xi., Parts 3, 4; Vol. xii., Part 1. } The Society.
- Proceedings of the Bristol Naturalists'
Society, 4th series, Vol. ii., Part 1. } The Society.
- Transactions of the Natural History
Society of Glasgow, Vol. viii., new
series, Part 1. } The Society.
- Transactions of the Edinburgh Geo-
logical Society, Vol. ix., Part 2. } The Society.
- The Journal of the Northants Natural
History Society, Vol. xiv., Nos. 109
—112. } The Society.
- Proceedings of the Geologists' Associa-
tion for 1908. } The Association.

- Verhandlungen der Naturforschenden
Gesellschaft in Basel, Vol. xix., No. 3. } The Society.
- Annals of the National Museum of
Montevideo, Vol. vi. } The Society.
- Proceedings of the Geological Institute
of Mexico, Vol. ii., Nos. 1, 2, 3, 4, 5, 6.
Bulletin, No. 23. } The Institute.
- Bolletin del Cuerpo de Ingenieros de
Minas del Peru, Nos. 50, 53, 56, 57,
58, 59, 60, 61, 62. } The Engineers.
- British Association Handbooks. W. Whitaker, F.G.S.
- Volcanoes by Prof. Dr. W. Branco. S.S. Buckman, F.G.S.
- Illustrations of Indian Zoology, by
John Edward Grey, F.R.S. } F. W. Catton, Bell-
thorpe, Wilberfoss.
- Proceedings of the University of Renn,
Vol. vi., Parts 1, 2. } The University.
- Bergen Museums Aarbog for 1908. The Museum.
- University of Toronto Studies, Vol. ii.,
Nos. 4, 6, 20, 21, 66, 67, 68, 69, 70, 72. } The University.
- Det Kongelige Norske Videnskabers
Selskabs Skifter, 1907. } The Society.
- Annual Report of the Department of
Mines of New South Wales, 1907. } The Department.
- Mitteilungen des Vereins für Erdkunde
zu Leipzig 1907. } The Society.
- Bulletin of the University of Montana,
No. 48; President's Report and Bio-
logical series, No. 14. } The University.
- Report and Proceedings of the Belfast
Natural History and Philosophical
Society, 1906-7. } The Society.
- A Census Catalogue of British Mosses
and 13th Annual Report of the Moss
Exchange Club, 1908. } W. Ingham, B.A.
- Roman Coins found on the Wolds by
the Rev. E. Maule Cole, M.A. } The Author.

- | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------|
| The Discovery of Roman Remains at Aldeburgh, by Charles Ganz. | } | The Author. |
| The Agricultural Journal of India, Vol. i., Nos. 1, 2, 3, 4, 5, 6; Vol. ii., Nos. 4, 5, 6; Vol. iii., Parts 1, 2, 3, and Reports 1905-6, 1906-7. | } | The Society. |
| Canada's Fertile Northland, by the Hon. Frank Oliver. | } | The Author. |
| Bulletin of the New York Public Library Nos. 5—9. | } | The Library. |
| Hull Museum Publications, Nos. 49, 50, 51, 52, 53, 24, 26, and Index to the Publications and Guide to the Wilberforce Museum, by T. Sheppard, F.G.S. | } | The Author. |
| Bulletin of the Lloyd Library, No. 10. | | The Library. |
| Meteorological Observations at Stations of the 2nd Order for 1903, Report for 1907, Monthly Mean Values of Barometric Pressure for 73 selected stations, Annual Report of the Meteorological Committee, Report of the International Meteorological Conference at Innisbruck 1905, Report to International Meteorological Committee and Weekly Weather Reports for 1907. | } | The Meteorological Society. |
| Report of the County Borough of Warrington Museum Committee. | } | The Committee. |
| List of the Old Stained Glass Windows in St. Mary's Abbey, York, by the Provost of King's College, Camb. | } | The Author. |
| 16th Report of the Borough of Leicester Museum and Art Gallery Committee. | } | The Committee. |
| Reprint of Saxon Crosses in the Museum, York, by W. G. Collingwood, F.S.A. | } | The Author. |
| The Calendar of the University of Leeds, 1908-9, and 4th Report. | } | The University. |

| | |
|---------------------------------------------------------------------|--------------------|
| Illustrated Catalogue of the Preston Corporation Art Gallery. | } The Corporation. |
| 74th Annual Report of the Bootham School. | } The School. |
| 41st Annual Report of the Yorkshire Fishery Board. | } J. E. Jones. |
| 85th Report of the Whitby Literary and Philosophical Society, 1907. | } The Society. |

GEOLOGY.

A series of Fossil Shells from the Post Tertiary of Bridlington. A large series of Ammonites Reptilia and Shells from the Lias of Yorkshire. A series of Fossil Plants from the Estuarine Beds of Yorkshire. Goniatites, Orthoceras, etc., from the Carboniferous Limestone of Yorkshire. Fossil Plants from the Yorkshire Coalfields. A series of Marsupities from the Upper Chalk of Dorsetshire. Reptilian teeth, Vertebræ, &c., from the Upper Greensand. A series of Ammonites from the Gault, Folkestone. A series of Trigonias from the Kimmeridge Clay. A series of Echinoderms Trigonias, etc., from the Great Oolite and Inferior Oolite. A series of Fossils from Coral Rag, North Grimston; Coralline Oolite, Malton and Appleton. Fossils from the Neocomian of Tealby. Bradford Clay, Crinoids, Trilobites, from the Wenlock Limestone, and a series of Graptolites from the Skiddaw Slates, and various other Fossils and Minerals from Yorkshire formations.

Mrs. Walker and
Mr. J. E. F. Gelson
Walker.

ZOOLOGY AND COMPARATIVE ANATOMY.

| | |
|---------------------------------------------------------|------------------------|
| Live Peacock. | Mr. Talbot Agar. |
| Silver-grey variety of Common Partridge. | } Mr. C. L. Burrows. |
| Albino Wild Rat from Thicket Priory. | |
| Two Pallas's Sand Grouse, in case, shot at Spurn Point. | } Mr. J. Backhouse. |
| Specimen of Death's Head Moth. | |
| Stuffed Apteryx. | The Misses Wilson. |
| A case of Ruffs. | Mr. R. Bambridge. |
| Three live Crossbills. | Mr. W. H. St. Quintin. |
| Pair of live Golden Pheasants. | Mr. W. Bell. |
| Shark's Jaw and Coral. | Mr. J. E. Jones. |

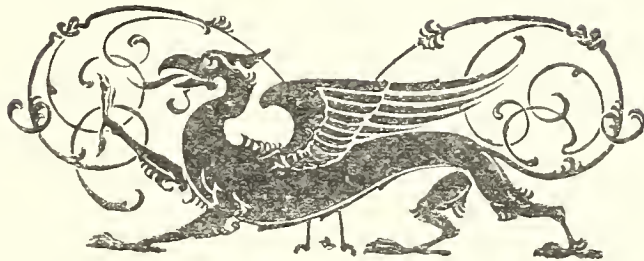
ANTIQUITIES.

| | |
|---------------------------------------------------------------------------------------------------------|------------------|
| Pair of Gold Ear-rings, 7th century, Greek. | } Mrs. Howarth. |
| Pennies from Wishing or Sacred Tree on an Island in Loch Maree. | |
| Bone Pin Polishers, found in London. | F. W. Reader. |
| Three Assignat Money-orders of the time of the French Revolution. | } Capt. Walker. |
| Two Farthings and Clippings of Charles I., circa 1626, found in a well on the Castle Hill, Scarborough. | |
| A native Musical Instrument from Zanzibar. | } Mr. W. Cooper. |
| Old Hand-braiding Loom. | |
| Old Knitting-needle Holder. | Mr. O. Grabham. |
| Two Vases of Linthorpe Ware. | Mr. C. Scott. |
| One Jug Comondale Ware. | Mr. P. Crossley. |

| | |
|-----------------------------------------------------|-------------------|
| Vase, Glazed Tiles, etc., of Burman- tofts Ware. | } Mr. R. W. Bond. |
| Picture of Roman Pavement. | |
| A Norwegian Medal. | Dr. E. Taylor. |
| A pair of old Sugar-nippers. | Mr. J. G. Brown. |
| | Mr. J. Backhouse. |

MINERALOGY.

| | |
|-----------------------------|----------------------|
| A Calcite Crystal. | Mr. J. Backhouse. |
| Specimen of Copper Pyrites. | Mr. W. E. Heathcote. |



THE
ROMAN POTTERY IN YORK MUSEUM,

BY THOMAS MAY, F.S.A. (Scot.)

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3. New Forest Ware.
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6. Mortaria.

INTRODUCTION.

THE well-known collection of pottery of the Roman period, found principally at York, in the Museum of the Yorkshire Philosophical Society, includes varied specimens of Gaulish and German imported *terra sigillata* and Romano-British or native wares of great interest and importance to archæologists. To increase its usefulness to the latter by the arrangement and illustration of its treasures, this general description has been prepared by permission of the Council and with the co-operation of Messrs. Oxley Grabham, M.A., curator, and William Watson, assistant-curator. The following recent writers upon the subject, are those upon whose authority the classification and dating of the specimens has been based:—

List of Authorities referred to and Abbreviations used in the following descriptive list.

Déchelette, I. and II.—“Les vases céramiques ornés de la Gaule Romaine,” tomes I. and II., 1904.

Walters.—“Catalogue of Roman Pottery in the British Museum, 1908,” by H. B. Walters.

Drag. — “Terra Sigillata,” by Hans Dragendorff, Bonner Jahrbuecher, Heft, xcvi., xcix., pp. 18, 155.

Koenen.—“Gefässkunde,” by Constantine Koenen, 1895.

Ludowici, 1901-4.—“Stempel-Namen Roemischer Toepfer von meinem Ausgrabungen in Rheinzabern,” by W. Ludowici, 1901-4.

Neuss.—“Die Keramik,” by Hans Lehner, in NOVAESIVM. Bonner Jahrbuecher, Heft. cxi-cxii., p. 336, 1904.

Hofheim.—“Typen der Tongefaesse aus dem roemischen Lager bei Hofheim,” by Ritterling, Nassauer Annalen, xxxiv, 1904.

With permission of the authorities, Mr. Walters' headings of the very useful Catalogue of the Roman Pottery in the British Museum have been adopted for the Table of Contents, and for the arrangement of the specimens, not only on account of their accuracy and completeness, but for the sake of uniformity with

generally accepted systems of naming and dating. Mr. Walters has also looked over the proofs.

The numbers employed for specifying the shapes of the vessels are those suggested by Dragendorff and Déchelette, and also by Mr. Walters himself, and represented on four plates at the end of the catalogue referred to.

RUTENIAN FABRIC.

The arrangement and dating of the *terra sigillata* specimens imported from Gaul (1 Rutenian and 2 Lezoux fabrics) are mainly those proposed by Déchelette, whose conclusions are derived from excavations on the sites of the potteries in Southern and Central France, and the discovery of moulds, potters' waste, and vast quantities of fragments bearing over 3,000 potters' names stamped upon them. These names, when found even in remote localities, leave no doubt as to the origin of the vases and fragments.

The most important centre of manufacture of this class of ware during the first century of our era, not only in the Gaulish provinces, but in the whole Roman Empire, was at La Graufesenque, near Rodez, in the department of Aveyron (the ancient Condatomagus in the territory of the Ruteni). This and the small contemporary and dependant pottery at Montans are both situated upon the Tarn, a tributary of the Garonne, by which their productions had access to the great trade route leading both north and south by Narbo and Corbulo.

The carinated or angular-sided bowl, form 29 Dragendorff, and the cup with sides expanding in a double curve, form 27, are the characteristic productions of these potteries during the period of their activity from about A.D. 30 to 100, but other forms (the upright bowl, form 30; the rounded bowl, form 37; and the cup, form 33, with straight sloping sides) were exported thence towards the end of the century. The ware is distinguishable by its careful finish, and glossy, highly vitrified, dark-red paste and glaze. Six examples of the ornamental bowl, form 29 (though all of them imperfect or partly restored from fragments), in case D, are separately described and illustrated on account of their rarity and importance. The names of thirty-six of the potters of these two localities taken from the published lists in Wellbeloved's "Eburacum," p. 128, and the "Corpus," Vol. VII. (both of them incomplete at the present date) are given.

List of Potters of La Graufesenque and Montans.

ACVTVS, ALBVS, ATTIVS, AVITVS, CAIVS, CARILLVS, CASTVS,
 CENSOR, COELIVS, COLONVS, COSIVS, RVFINVS, LCOSIVS,
 VIRILIS, FRONTIVS, IANVARIVS, MARTIVS, MEDDILLVS,
 MONTICVS, MONTANVS, NIGER, PATRICVS, PAVLLVS, PONTIVS,
 PRIMVS, QVINTVS, RVFVS, SECVNDVS, SEVERVS, SILVANVS,
 SILVINVS, VIRILIS, VIRTVS, VITALIS.

Twenty-four of these names are contained in the list of stamps derived from the great legionary camp at Neuss (NOVAESIVM) dating from about A.D. 25 to 105 (Bonner Jahrbuecher, III-2, 1904, pp. 336-351), and six are in the list of those found at Hofheim A.D. 40-60; clear indications of the early date assignable to the Roman occupation of York.

LEZOUX FABRIC.

The productive centre of Lezoux is in Auvergne (the ancient territory of the Arverni) on the banks of the Allier, a tributary of the Loire. It thus possessed more direct access to British markets than the preceding for its varied products, which are represented by many fragments of bowls and cups bearing potters' stamps in cases D. E. F. The commoner forms and types of ornamentation and the approximate dates of their production at Lezoux, as determined by Déchelette and adopted by Walters, Catalogue, xxxiii. are the following:—

1. A.D. 40-75. Bowls, form 29. Patterns and no figures.
2. „ 75-110. Bowls, forms 30 and 37. Transitional ornament (=the double friezes of form 29 applied to bowl 37) and panels (or metopes) framing figures.
3. „ 110-200? Similar forms. Arcading, large wreaths or scrolls, medallions, friezes of free figures.

The dish, form 31 (with oblique-plane sides), and cup, form 33, along with the preceding Nos. 2 and 3, are typical of the 2nd century, and bear more potters' stamps than any others.

As a result of the competition between the two centres which began about A.D. 70, the exportation to Britain of the earlier Rutenian fabrics almost entirely ceased about the beginning of the 2nd century. It is thought probable (Walters *loc. cit.*) that the manufacture of ornamental bowls of the form 37 was discontinued

at Lezoux about the end of the same century, and the *Sigillata* industry entirely ceased on the destruction of the potteries during the incursions of the Alamanni under Chrocus about A.D. 256-9.

A list follows of the known potters of Lezoux whose stamps have been found at York. There are a number of others which are still uncertain owing to the fact that a revised list of potters' stamps proper to Lezoux has not been published.

List of Potters of Lezoux.

ADVOCISVS, ALBVCIANVS, ASIATICVS, ATILIANVS, AVENTINVS,
BANVVS, BRICCVS, CALETVS, CINNAMVS, CINTVSMVS,
COBNERTVS, CRVCVRO, DAGOMARVS, DIVIXTVLLVS,
DOECCVS (or DOVECCVS), GEMINVS, GENITOR, GRANIVS,
IANUS, IVSTVS, MAIOR, MARCVS, MARTIVS (or MARTINVS),
MATERNVS, MOXIVS, NAMILIANVS, NAMI CROES,
(= NAMILLVS ET CROESVS), PATERNVS, PAVLLVS (or PAVLVS),
PRISCIANVS, QVINTVS, SEDATVS, VERECVNDVS.

The productions of the smaller pottery mentioned by Déchelette (*op. cit.* I. 117) as existing at Banassac, in Lozère, and as exporting similar bowls of form 37 with inscriptions of an ornamental type are not represented at York, though fragments of ten such vessels are in the British Museum. The names of the potters proper to Banassac are also wanting.

GERMAN FABRIC.

The *terra sigillata* produced at Rheinzabern (*Tabernæ Rhenanæ*), near Speyer, on the left bank of the Rhine in the Roman province of Germania Superior, from the beginning of the 2nd century to the middle of the 3rd (when the industry was likewise destroyed by the German inroads), is in imitation of the later styles of Lezoux, viz., figures in large medallions, or arcading, or in friezes without framing. It is well represented at York probably owing to the latter's position on a navigable river near to the opposite coast and to Britain being the sole foreign market open to it during the predominance of Lezoux. It is distinguishable by its inferior technique and style of decoration, a few figures only being used and repeated over again round the body of the same vase. The potters' names are usually in the nominative with F (*fecit*) and never with O or M (*officina* or *mann*). The following are the

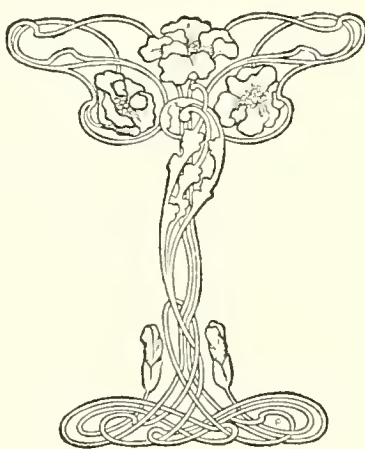
potters' stamps preserved in the Museum which are included in the list of Rheinzabern potters, published by Ludowici, 1904:—

List of Potters of Rheinzabern.

B•F•ALLONI, ATTIANVS, CATVS, CERALIS, CVNISSA, IVVENIS,
LVCIVS, MAIANUS, MARCELLINVS, MARTINVS, MERCATOR,
REGINVS, VERECVNDVS, VERVS, M•A•VICTOR.

These names are enough to show that the amount of commercial intercourse between Britain and the Upper Rhine district during the 2nd and 3rd centuries was considerable.

NOTE.—Owing to the limited space available in the Annual Report of the Philosophical Society, no attempt has been made to furnish a complete catalogue in any department. For a like reason, only Part I. relating to red *terra sigillata* wares has this year been published, and all reference to ornamental bowls of red *terra sigillata*, form 37, made at Lezoux, omitted. Specimens of the latter are to be met with in most museums, and a description of those in York Museum would be of little service unless complete.



ROMAN POTTERY FOUND IN BRITAIN.

DESCRIPTION OF THE PLATES.

Plate I.

Plate I. A.—ORNAMENTED RED WARES.

(Terra Sigillata)

I.—RUTENIAN WARE (Fabric of La Graufesenque and Montans).

1. Bowls and fragments of form 29. (*a*) Scroll Decoration without figures (wanting); (*b*) Scroll Decoration with figures; (*c*) Festoon Decoration; (*d*) Decoration in Panels; (*e*) Decoration in Friezes.
2. Bowls and Fragments of Bowls, form 30 and 78.
3. Bowls and Fragments of Bowls, form 37.

RUTENIAN FABRIC.

(*b*) Scroll Decoration with figures.

I. FRAGMENT OF BOWL (form 29).

Hard-baked, glossy dark-red paste. Moulded rim with two rows of roulette hatched pattern.

Two friezes divided by a moulding between two rows of beads. Upper frieze—Scroll pattern framing in the superior lobes volutes ending in rosettes and birds (1040, Déchelette) on stems; and in the inferior lobes similar volutes and flowers on stems, alternating with rows of arrow-heads. Lower frieze—Elongated tongue pattern (godroons).

2. FRAGMENT OF BOWL, similar.

Rim as last.

Two friezes divided by a moulding between two rows of beads. Upper frieze—Scroll pattern framing in the superior lobes volutes ending in rosettes and flowers on stems; in the inferior lobes, medallions with cable border in which are bees (1047, Déchelette) and flowers on stems. Lower frieze—Scroll pattern framing in alternate lobes pointed leaves and birds on stems and rows of arrow-heads.

3. FRAGMENT OF BOWL, similar.

Moulded rim with roulette hatched pattern.

Two friezes divided by a moulding between two rows of beads. Upper frieze—Scroll pattern with volutes ending in rosettes and flowers on stems. Lower frieze—Grill pattern of rows of spirally-moulded upright lines, crossed by a horizontal one, and enclosing medallions with cable border framing birds to r. looking back.

4. FRAGMENT OF BOWL, similar.

Moulded rim with roulette hatched pattern.

Two friezes divided by a moulding between two rows of beads; a band of upright leaves and zig-zag line below. Upper frieze—Scroll pattern with volutes ending in resettes and sprigs with blossoms. Lower frieze—Scroll pattern framing in alternate lobes polygonal leaves on stalks, and medallions with cable border, in which are hare or rabbit (946, Déchelette) reversed.

(c) Festoon Decoration.

5. FRAGMENT OF BOWL, more than half (form 29).

Moulded rim with two rows of roulette hatched pattern.

Upper frieze—Band of festoons with leaves between, framing volutes ending in rosettes; moulding between two rows of beads. Middle frieze—Tongue pattern (godroons). Lower frieze—Band of festoons framing swans to r. and l. (1017, Dechelette).

6. BOWL, imperfect (form 29).

Moulded rim with two rows of roulette hatched pattern.

Upper frieze—Band of double festoons divided by tassels, framing volutes ending in rosettes and sprigs with buds; moulding between two rows of beads. Middle frieze—tongue pattern (godroons). Lower frieze—Scroll pattern with volutes ending in rosettes and sprigs with leaves. In the centre is the stamp OF CAIV: C.I.L. XIII., 10010, 397, VII. 1336, 206.

7. BOWL, imperfect (form 29).

Moulded rim with two rows of roulette hatched pattern.

Two friezes divided by a moulding between two rows of beads. Upper frieze—Band of triple festoons divided by tassels, framing leaves on stalks. Lower frieze—Scroll pattern framing in alternate lobes large feathered leaves, buds, and blossoms, on stalks, and (1) Cupid kneeling, holding a tuft of grass: above three rows of arrow-heads alternating with (2) hare or rabbit, couchant (954, Déchelette), above a conventional plant. In the centre is the stamp MEΘILLVS.

(d) Decoration in Panels.

8. FRAGMENT OF BOWL (form 29).

Moulded rim with two rows of roulette hatched pattern.

Two friezes divided by a moulding between two rows of beads. Upper frieze—Panels divided by zig-zag lines, (1) three rows of arrow-heads; (2) cruciform pattern formed by zig-zag diagonals with leaves in the spaces. Lower frieze—Scroll pattern framing in alternate lobes, (1) tendrils with leaves, buds, and blossoms, (2) conventional plant.

(2) Bowls and Fragments of Bowls (form 30).

9. FRAGMENT OF BOWL (form 30).

Above the design, ovolo border and row of beads.

Scroll framing in the superior lobes, polygonal leaves, spikes of blossom, tendrils ending in volutes and rosettes; in the interior lobes, combat of two gladiators, *Thraces* (603-4, Déchelette). Band of arrow-heads in three rows below the spaces and a single row below the scroll.

(3) Bowls and Fragments of Bowls (form 37).

(b) Panel Decoration.

10. BOWL, imperfect (form 37).

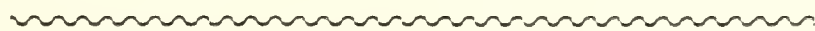
Above the design, ovolo border and row of beads. Panels with chain borders ending above and below in rosettes and leaves. Below the design, a row of beads and straight wreath.

(1) Double panel with hare running to l. above and palm tree (1122, Déchelette) below; four birds in field, swans (1017, Déchelette?). (2) Double panel with Victory in profile to l. holding palm branch and wreath (481, Déchelette) above, and similar bird to 1017 below. (3) Double panel with dog running to l. above, and two Sileni walking to r. (323, Déchelette) below. (4) Double panel with Diana *à la biche* (63, Déchelette) above, fantastic plant below. (5) Double panel with diminutive two-horse chariot and driver (647 variant, Déchelette) above, and palm tree and birds as in (1) repeated, below.

11. BOWL (form 37).

Panels with zig-zag borders ending in rosettes, ovolo border and straight wreath above and straight wreath below.

(1) Double panel: in upper compartment, an archer kneeling to r. drawing the bow (170, Déchelette) over against a lion leaping to l. (762, Déchelette); in lower compartment, fan-tail leaves, buds on stalks, and volutes ending in rosettes. (2) Cruciform pattern with zig-zag diagonals, having in the sides leaves on long sinuous stalks, and above and below fan-tail leaves and buds on looped stalks.

*Plates II. and III., Part I.*

2.—ARVERNIAN WARE (Fabric of Lezoux).

1. Fragments of Bowls, form 29.
2. Fragments of Bowls, form 30 and 78.
3. Fragments of Bowls, form 37. (a) With Scroll Decoration; (b) Festoon Decoration; (c) Decoration in Panels; (d) Metope and Medallion Style; (e) Arcading Style; (f) Free Style.
4. Miscellaneous, forms 64 and 67.
(Forms 67 and 78 only are illustrated as being of greater rarity than the others).

3.—GERMAN FABRIC.

1. Ornamented Wares.

1. FRAGMENT OF VASE (form 67).

Déchelette, I., pl. iv., No. 67, p. 152. An example with the stamp of BVTRIO, a potter of Lezoux, A.D. 75-110, found on the site of the potteries. Koenen, p. 90, XIII., 13—not later than A.D. 140.

Decoration in frieze, bordered by carefully incised girth-grooves. Lion or panther walking to r. (new type), and conventional trees.

2. FRAGMENT OF VASE, similar.

Decoration in panels divided by rows of beads ending in rosettes. Cupid with arms raised, seen from behind (254, Déchelette).

3. FRAGMENT OF VASE, similar.

Triple rows of vertical zig-zag lines alternating with rows of rosettes.

4. FRAGMENT OF VASE, similar.

Decoration in panels divided by zig-zag lines, the ornaments consisting of uniform rows of triangular leaves on long straight stalks which have two short cross-bars at the same height, or they may represent a row of conventional trees.

5. FRAGMENT OF VASE, similar.

The lower portion of a frieze of uniform pattern, bordered above by girth-grooves, and below by a straight wreath. The pattern may represent straight swords with square ends and circular pommels.

6. FRAGMENT OF VASE, similar.

Upper part of frieze with scroll decoration, bordered above by girth-grooves and a row of beads. In the alternate lobes (1) a swan (new type), and below two rows of discs; (2) large leaves and spikes of blossom on long winding stalks.

7. Small FRAGMENT OF VASE, similar.

Portion of two bands of ϵ and S shaped patterns, bordered by girth-grooves.

8. FRAGMENT OF BOWL (form 78).

Part of a decorated frieze, bordered above by three girth-grooves, and below by a row of beads and one girth-groove. On the right—The rear portion of a gladiator fighting (blurred impression). In the centre—A helmet and three swords (one of them a *sica*) suspended by zig-zag lines from the upper border. On the left—A Maltese Cross.

9. FRAGMENT OF VASE, similar.

Portion of decorated frieze bordered by girth-grooves.

Two rabbits, couchant, with palm tree or cluster of palm branches between (comp. 941, 969, Déchelette), and tree of which each branch bears a single leaf (1134, Déchelette). May be of Rutenian fabric, cf. Walters' Cat. M 558—592.

10. FRAGMENT OF BOWL, similar.

Decoration in panels bordered by rows of beads, with girth-grooves above and a straight wreath beneath. The pattern consists of spiral stems ending in leaves, flowers with many petals, and five vertical rows of beads in one group.

Plate III. Part II.—(3) GERMAN FABRIC.

BOWL, imperfect (form 37).

Height $5\frac{5}{8}$ in., diameter $9\frac{1}{4}$ in., dull reddish-grey paste, thin glossy glaze. Free style. R. E. (1874) C. from Thos. Stevens. Above the design, ovolo border, and below a row of beads. A single row of figures.

Captives walking to l. with hands fastened behind their backs and chained together by a zig-zag line joining their necks. The same punch has been used for all the figures, which are exactly alike and placed at wide intervals round the body of the vessel, in the style of Rheinzabern.

*Plate IV.*A.—Ornamented Red Wares, *continued*.

4.—RED GLAZED WARE with Appliqué Reliefs.

Lezoux Fabric of Third Century.

OLLÆ (form 72). Déchelette, II., p. 171, fig. a.

The paste and glaze are those of the moulded vases. The date of the commoner forms 72 and 45, is fixed by the finding of a coin of Commodus, struck between A.D. 185 and 192, and a square glass bottle with the letters MCHR in the mouth of one of them used as a cinerary urn.

Walters' Catalogue, xlvii., M 2365—2376, Lezoux fabric of 3rd century.

Dragendorff, p. 252, plate xxvi., 31-33.

"Guildhall Mus. Cata.," p. 100, Nos. 549, 550, plate XLVII., 1, 2, p. 99, Nos. 517, 521.

"Illustrations of Roman London," p. 97.

Smith's "Catalogue of London Antiquities," p. 30, plate VII.

Form 45 (Deversoria).

Walters' Catalogue, xlviii., M 2244-7.

1. FRAGMENT OF SHALLOW BOWL (form 45) *deversorium*? Arretine fabric, cf. Walters' Cat., L 161—166.

Figures in high relief, moulded separately and applied to the upright side of the vessel. The moulded designs are—(1) River god reclining, his r. arm thrown over his head, and l. arm encircling a projecting spout. (2) Crater with godron ornament and heaped with fruit on which a bird is settling. (3) Cupid with arms outstretched running to r.

2. FRAGMENT OF OLLA (form 72).

Large portion of one applied figure—Paris, in short mantle and Phrygian bonnet holding the apple in his r. and a long staff (*pedum*) in his l. hand.

3. FRAGMENT OF WIDE-MOUTHED BOWL.

Brown paste with darker brown-red glaze. Coarsely moulded reliefs at wide intervals round the middle of the bulge, of which the two remaining are—(1) Mask of Pan (Déchelette, II. p. 25, 108). (2) Pine-cone (Déchelette, II. p. 234, 159).

4. FRAGMENT OF OLLA (form 72).

Round the body leaves moulded and applied with stalks *en barbotine* (Déchelette, II. p. 171, fig. A., plate I., fig. I).

5. MORTARIUM (form 45) *deversorium*.

The inside base studded with grains of quartz to resist friction. On the outside, a lion-face spout moulded separately and applied. (Déchelette, II. p. 231, plate IX. 1-3; Koenen, XVI. 24; Colchester Museum, General Collection, 471, 197'01, 702'04, and DCCCLXXX, E.A.S.) Stamped with name of potter GEMINIM.

Plates V. and VI. 5.—PLAIN WARES.

(1) Flasks. (2) Tettines or Child's Feeding Bottles (omitted). (3) Narrow-necked Jars or Pitchers (omitted). (4) Wide-mouthed Jars (Ollæ). (5) Bowls. (6) Cups. (7) Flat Pans or Dishes.

1. SMALL FLASK.

This is of rare form and perfection, with domed mouth-piece, reeded handle, finely moulded foot-ring, a cordon at the lower part of the bulge, and two accurately turned girth-grooves on the shoulder.

2. GLOBULAR OLLA (form 72).

The only ornament is a beaded rim and slight girth-groove at the joining of neck and bulge. Koenen, p. 105, xvi. 31, frequently found in Antonine grave-fields, A.D. 140-190.

3. BOWL (form 81).

On the outside is the stamp GNATIVS (AT ligulate), a name also found at Cirencester, but not recorded elsewhere in Britain or on the Continent.

Walters' Cat., plate XLIV. 81, M 2225, 2229, 2238, 2243. A similar bowl found at Wilderspool (May—"Warrington's Roman Remains," p. 62) bears the stamp SILVINVS FE, a Rutenian potter of the period A.D. 75-110.

4. CUP (form 27).

In the centre is the stamp BIG·A·FEC. Walters' Cat. xli. a potter of uncertain locality; xxv. a typical first century form.

5. CUP (form 46).

Koenen, p. 94, xiv. 11, found under circumstances which point to the earliest period of the Empire (before A.D. 100); Smith's Cat. of London Antiquities, p. 25, fig. 99.

6. CUP (form 33).

Walters' Cat. xxv. More potters' names are found on form 33 than on any other form, and it is typical of the 2nd century, Koenen, p. 105, xvi. 30. It begins to supersede form 27 at the end of the 1st century, is seldom wanting in the Antonine grave-fields (A.D. 140-190), and continues in a modified form and inferior technique to the end of the Roman period.

7. CUP (form 25).

Chalky paste coated with a dull, thin, light-red glaze or slip. Round the lower part of the body a moulding, below which, and near the foot, are girth-grooves.

Vessels of similar shape with a mottled-red coating, and others with small flat handles on either side, and a roulette hatched pattern below the brim, have been found in the burnt layer of Neuss (NOVAESIVM, p. 334, plate XXVI. 17) A.D. 70.

8. SMALL CUP.

Of elegant shape, with rounded body, slightly inverted lip, and two upright loop handles, coated with a thin pinkish-red glaze or slip. Round the lower part of the bulge is a slight girth-groove, and the under surface of the base is also grooved and carefully turned off with a plain moulding. The form has not been previously recorded.

9. SHALLOW BOWL (form 16).

In the centre is the stamp OF ARRI. The form of vessel and name of the potter are both of rare occurrence. ARRI occurs at Nîmes and Tarraco, but not elsewhere; ARRVSF at Hofen and Wurtemberg, with coins from Trajan to Severus, A.D. 98-211, Bonn. Jahrb. 99 (1896), p. 54. ARRO occurs at London and Exeter, and twice at Wilderspool (ARRONISM), but is referable to a different potter.

10. FRAGMENT OF BOWL (form 31).

In the centre is a portion of the potter's stamp OFMON (uncertain). On another fragment of a similar vessel is part of a stamp (OF)CEN, (Censor) a Rutenian potter. The form begins to make its appearance at the end of the 1st century. Walters' Cat., xxxvii. M 628-633, &c; Koenen, p. 92, XIV. 4-5, frequent in the burnt layer of Neuss, A.D. 70; the moulding on the outer lip is wanting on similar bowls of the Antonine period (A.D. 140-100).

11. BOWL (form 31).

In the centre is the stamp PATRIC (Patricus), a Rutenian potter of the earlier period, A.D. 16-80, whose name occurs frequently, in consequence, both in this country and on the Continent. Walters' Cat., xxxviii. M 923, &c.; Déchelette, I. p. 294.

12. BOWL (form 31).

In the centre is the stamp SECVNDINI-M (Secundinus) a potter of Lezoux, who produced ornamental bowls of form 37, with decoration in panels, and belongs to the second period, A.D. 75-110. Déchelette, I., p. 298.

14. SHALLOW VESSEL of unusual form.

With upright sides and base ascending evenly to the centre where it is only quarter of an inch below the brim. The border of the conical base is marked by an off-set or plain moulding, both inside and outside, and round the edge of the rim is a girth-groove. In the centre is the stamp MASCLVS (Masclus or Masculus), a Rutenian potter, who exported bowls of the form 27, during the period A.D. 16-80, Déchelette, I., p. 284; Walters' Cat., xxxvi., M 666, &c.

15. SHALLOW BOWL, form as Ludowici Tg. 1400. Walters' Cat., form 79 or 80.

In the centre is the stamp partly obliterated CL • MEN • (Clemens) a potter of Westerndorff, in Vindelicia, where potteries were established from about A.D. 150 to 250. C.I.L. Vol. III., 65.

16. BOWL (form 51), Ludowici Tc. 1670.

The form occurs at Pfünz, one of the castella of the German limes, No. 73, ORL, XIV., plate VI., D 51, Teller 7a, and the vessel is probably of German fabric.

17. DISH (form 22). Arretine fabric.

Hard dark-red lustrous glaze, moulding at rim and foot, girth-grooves round the centre, and carefully turned raised undersurface are indications of early date. One example occurs at Neuss, NOVAESIUM, p. 334, plate XXVI. 26, A.D. 25-105. The form assigned to the middle period of the Roman Empire (A.D. 100-250) by Koenen, XVI. 28b.

18. BOWL (form 40.)

Light-brown paste with a thin coating of pinkish-red slip. Round the outside, four slight girth-grooves, quarter of an inch apart. Being assigned by Koenen, plate XVI. 30 b, to the middle period of the Empire, A.D. 100-250, it probably belongs to the latest of these dates.

Plate VII.

6.—IMITATIONS OF METAL.

Walters' Catalogue, xlvii. M 108-114.

1. Skillets or Stew-pans with Moulded Ornamental Handles in imitation of Bronze Vessels. Déchelette, II., p. 316, plate VII., 1-11.
2. Ewers with Moulded Handles in imitation of Bronze Flagons or Ewers. Déchelette, II., p. 316-320, plate VIII., 1-2.
3. Handle of Kotyle, with Moulded Reliefs.

1. PART OF HANDLE OF A TRULLA (Skillet or Stew-pan).

Dull-red paste and glaze.

On the surface framed by a raised border are moulded reliefs consisting of a bird (peacock looking backward), dog chasing a hare, leaves on stalks, rosettes within rings of cable-pattern, &c. The type of vessel and ornament are imitated directly from a metal prototype, and are in the style of Lezoux. They are assignable to the 1st and 2nd Centuries, but the date cannot be more definitely fixed, Déchelette, II., p. 316, fig. 9 and plate VII; Walters' Cat. xlvii. M 110.

2. PART OF HANDLE OF A TRULLA, similar.

The ornaments on the surface in moulded relief are (1) part of a nude figure standing on the r. foot with l. crossed behind, (2) a leaf on a winding stalk, (3) single leaves, rosettes, and groups of four dots in the spaces, (4) the letters *AD adossé*. This monogram is associated with the name of DOECCVS, a potter of Lezoux, who exported bowls of form 37, ornamented in the style of large medallions assignable to the period between A.D. 110-250. Déchelette, I., p. 269; Walters' Cat., xxxix., M 1155, 1364.

3. PART OF HANDLE OF DISH.

Coarse paste and thin dull glaze. Without ornament but moulded in the form of a metal prototype. A small bracket is also placed underneath at the joining of the handle in order to increase the strength. The technique is thought to belong to the Antonine period (A.D. 140-190) by Koenen, p. 105, xvi., 27.

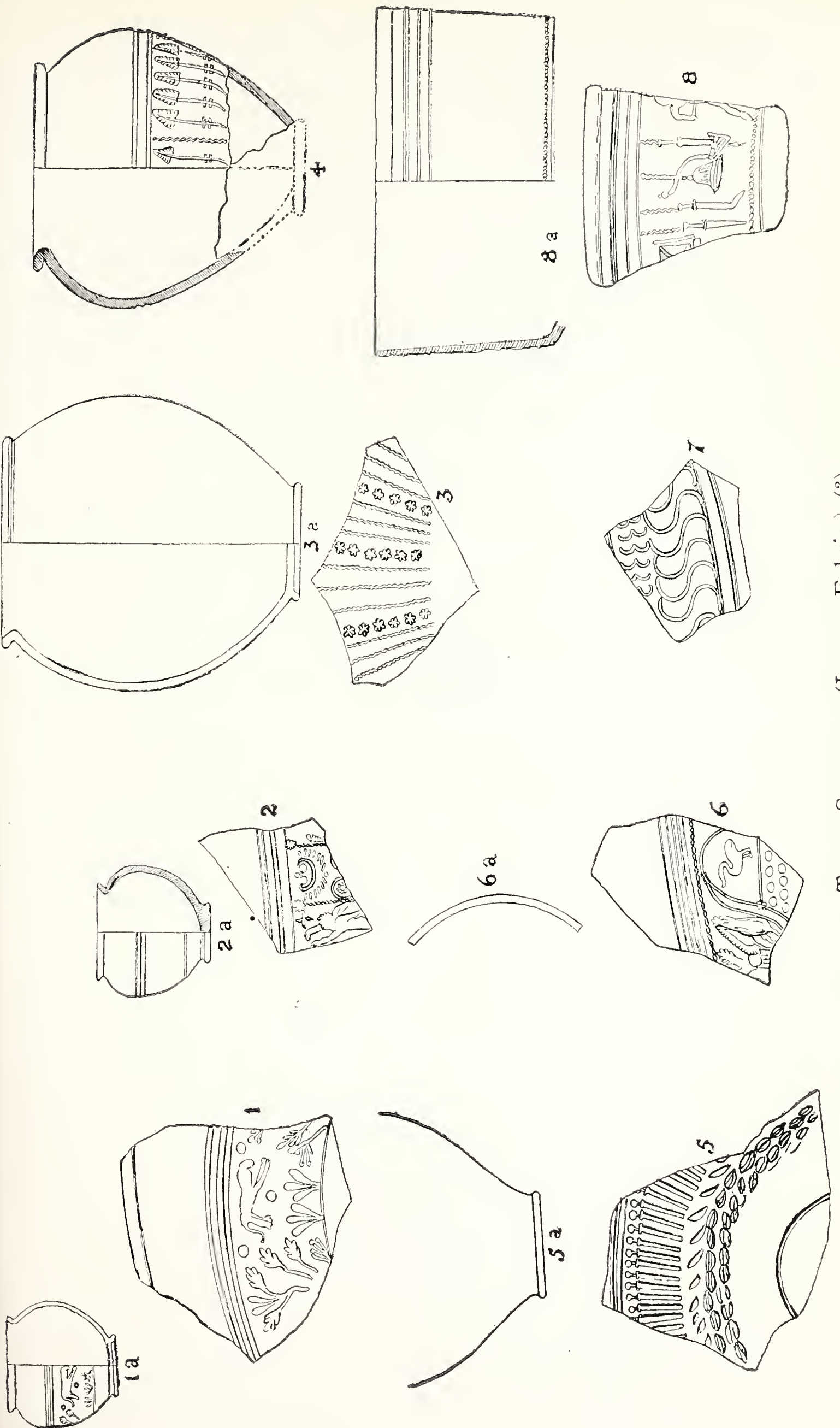
4. FRAGMENT OF KOTYLE (form 14 nearly), with part of the side and one of the handles.

To support the handle underneath, an upright ring with curved extensions is fixed at right angles to the side. The surface of the handle is ornamented with floral scrolls in moulded relief with a sunk border. On the side of the vessel is a conventional tree with numerous branches ending in leaves and scrolls with small knobs (buds) painted in opaque white slip or *en barbotine*. (Not figured).



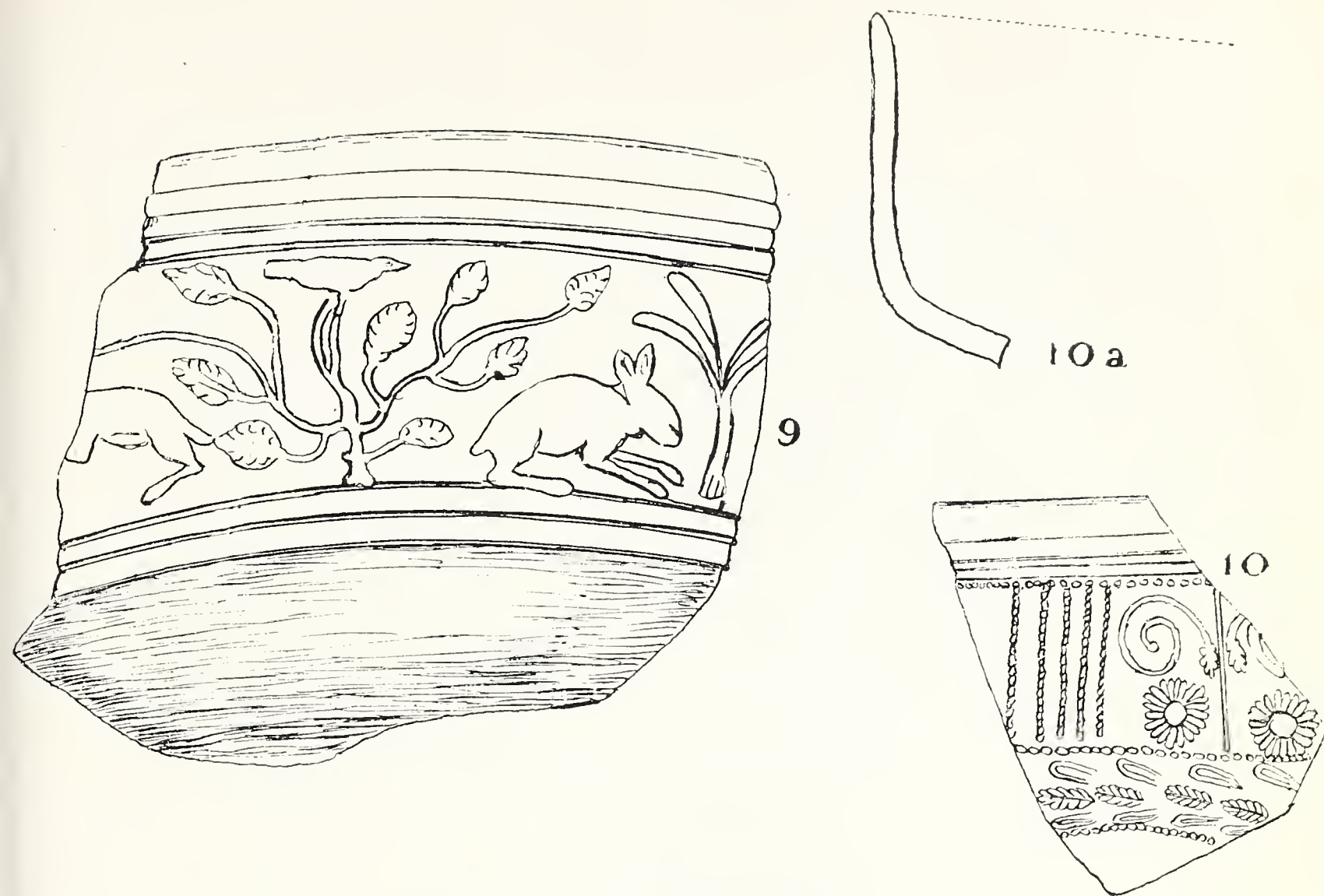
Figs. 1 to 12.—ORNAMENTED TERRA SIGILLATA (Rutenian Fabric).





TERRA SIGILLATA (Lezoux Fabric.) ($\frac{2}{3}$)





Part I.—TERRA SIGILLATA.

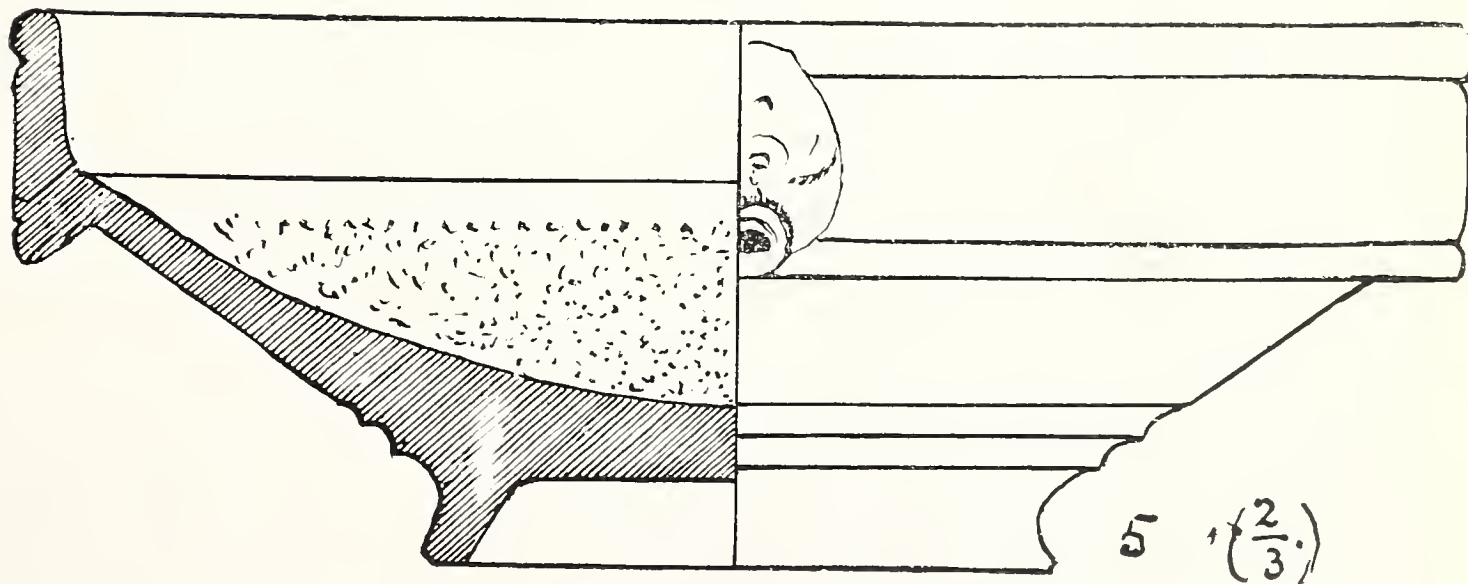
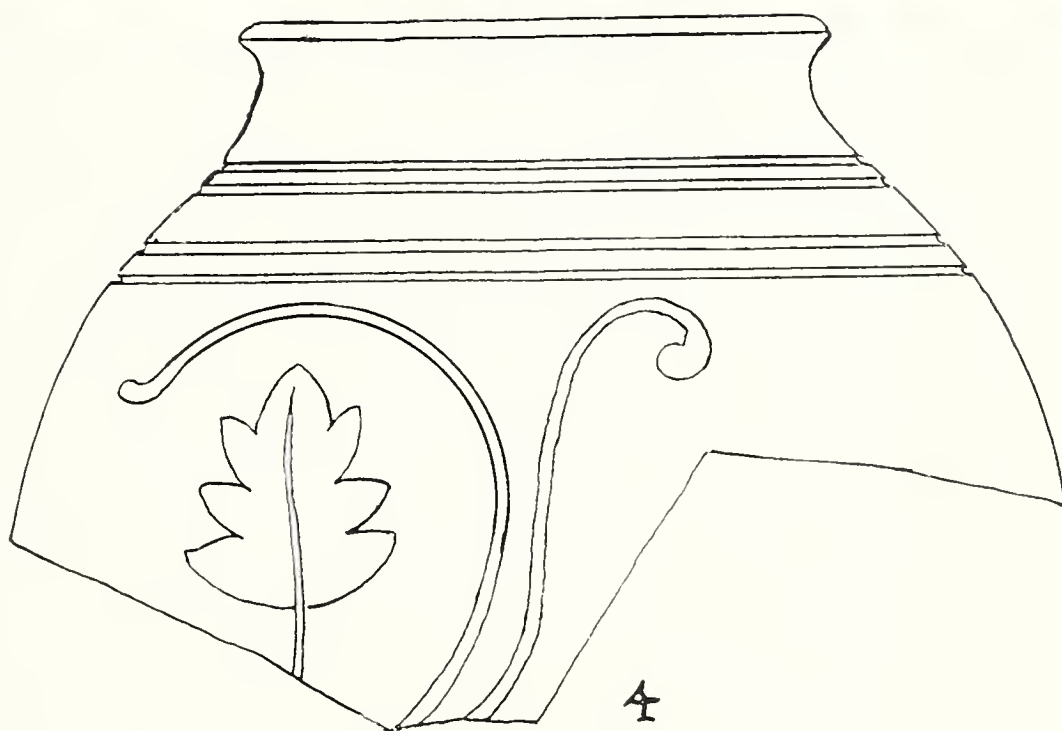
(No. 9, Rutenian Fabric.)

(No. 10, Lezoux Fabric.)

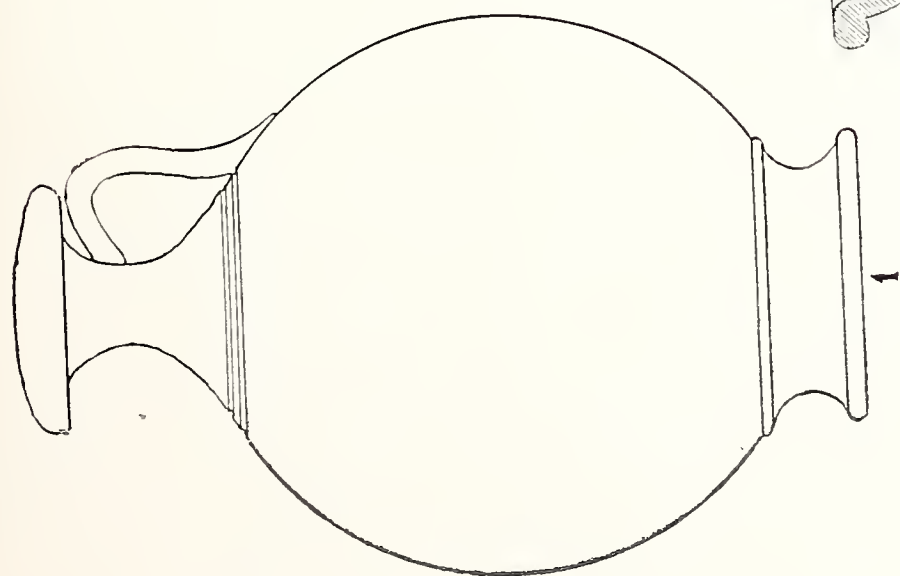
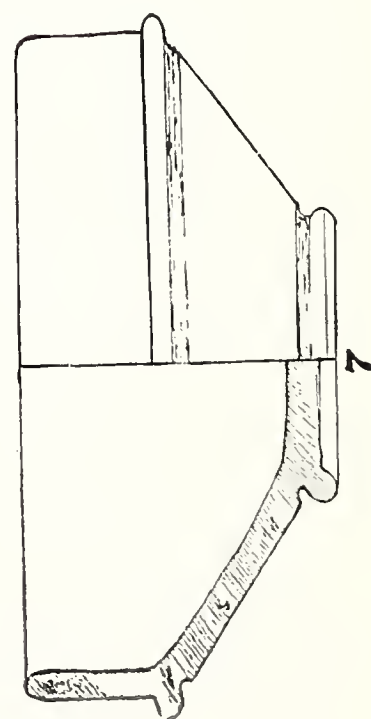
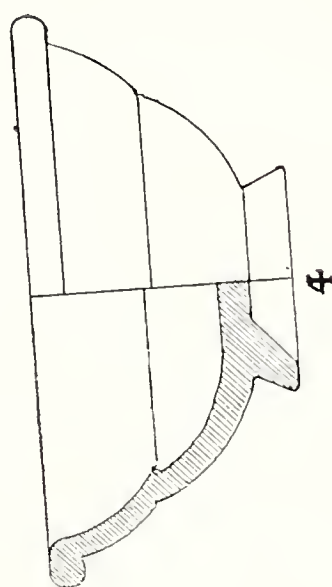
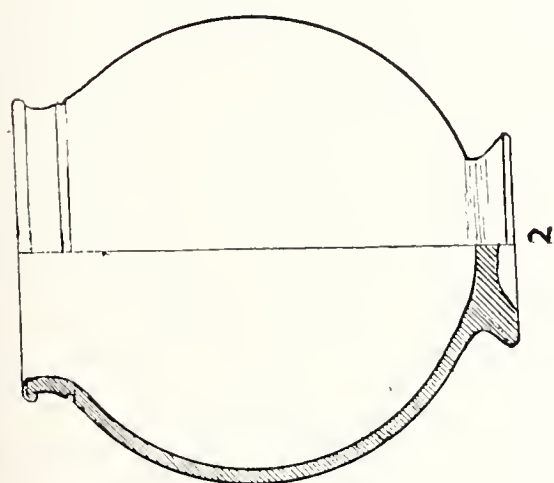
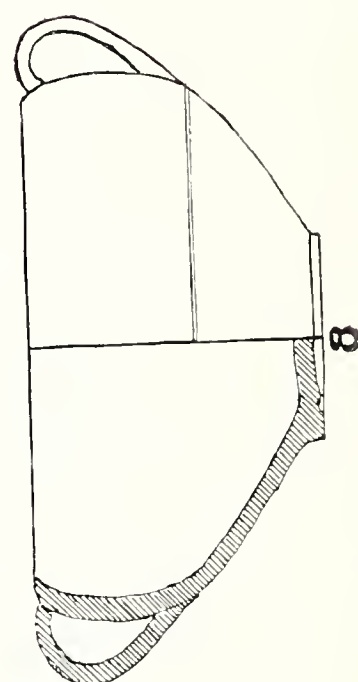
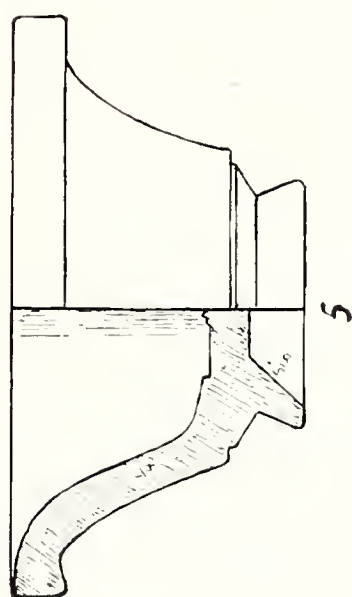
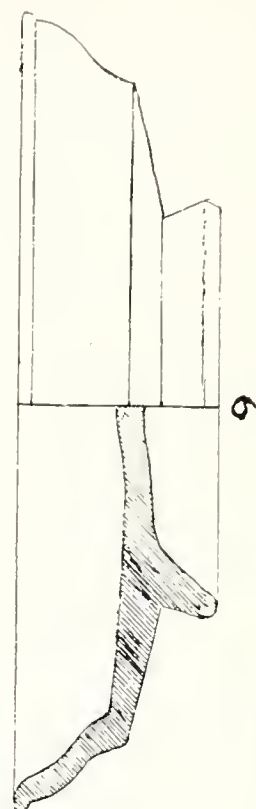
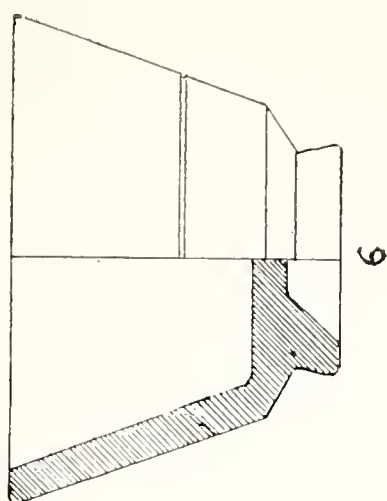
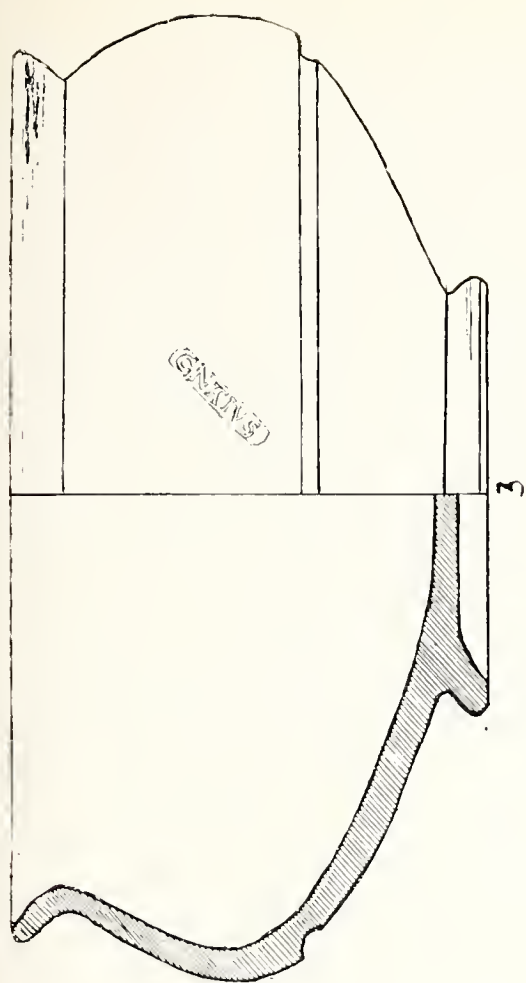


Part II.—TERRA SIGILLATA (German Fabric).





VASES WITH APPLIED RELIEFS.
 (No. 1, Arretine.) (Nos. 2—5, Lezoux Fabric.)





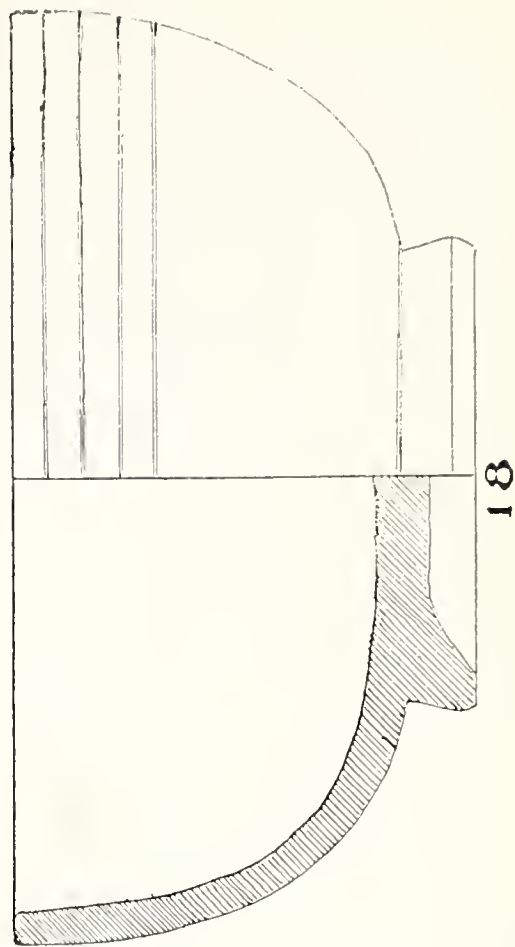
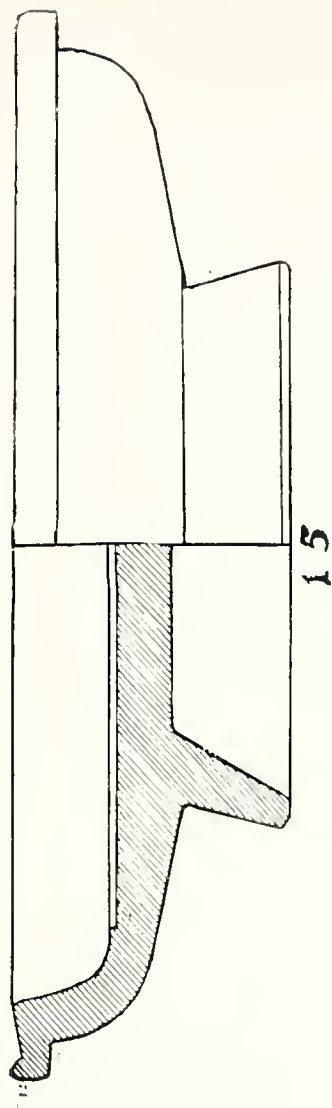
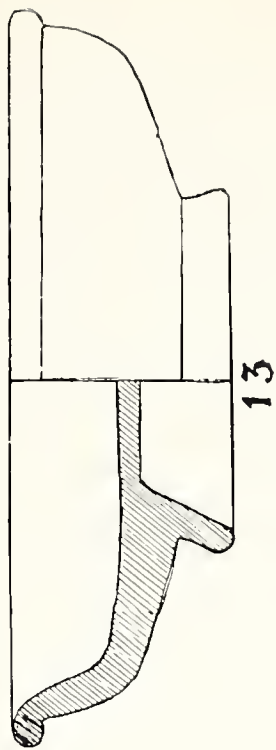
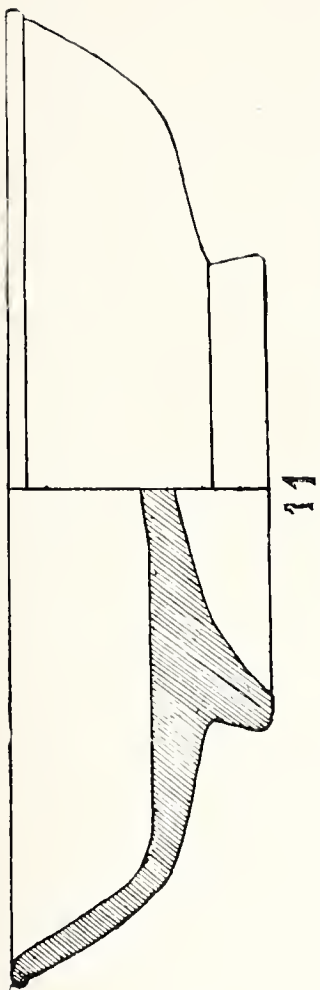
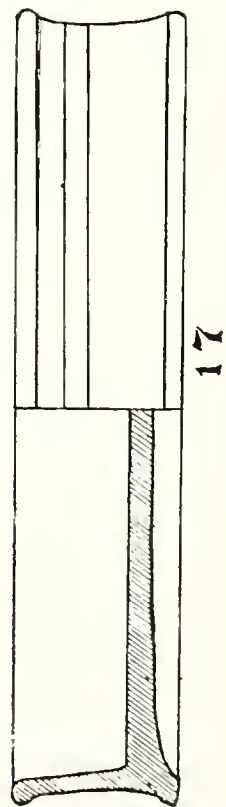
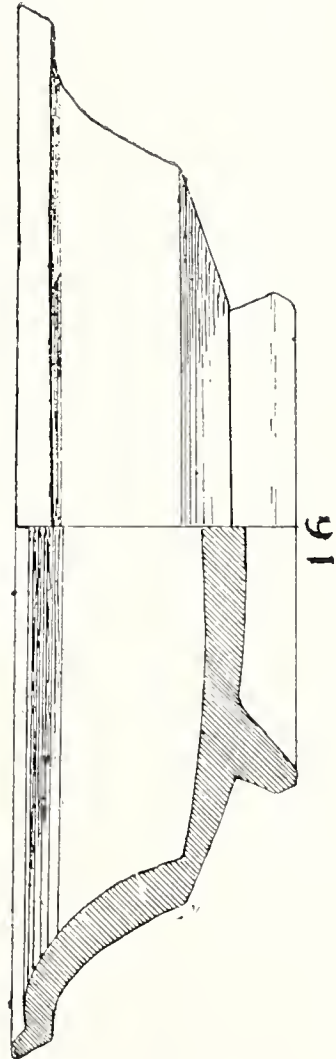
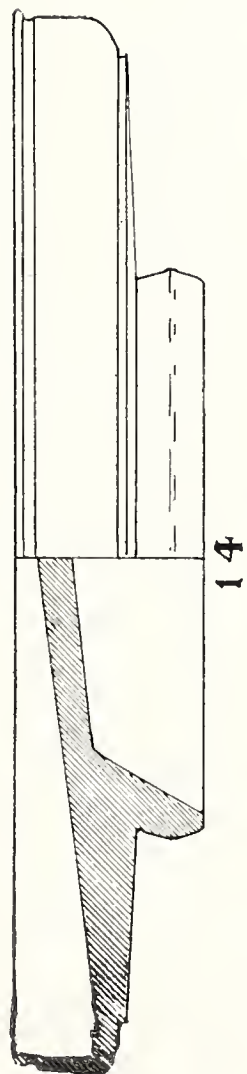
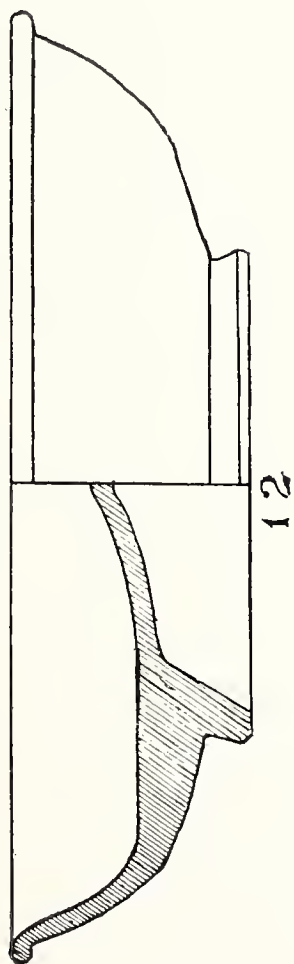
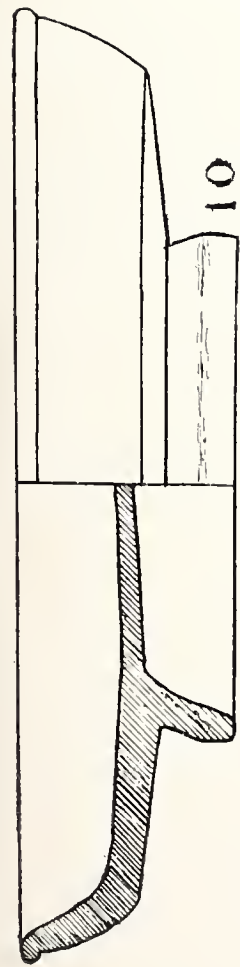
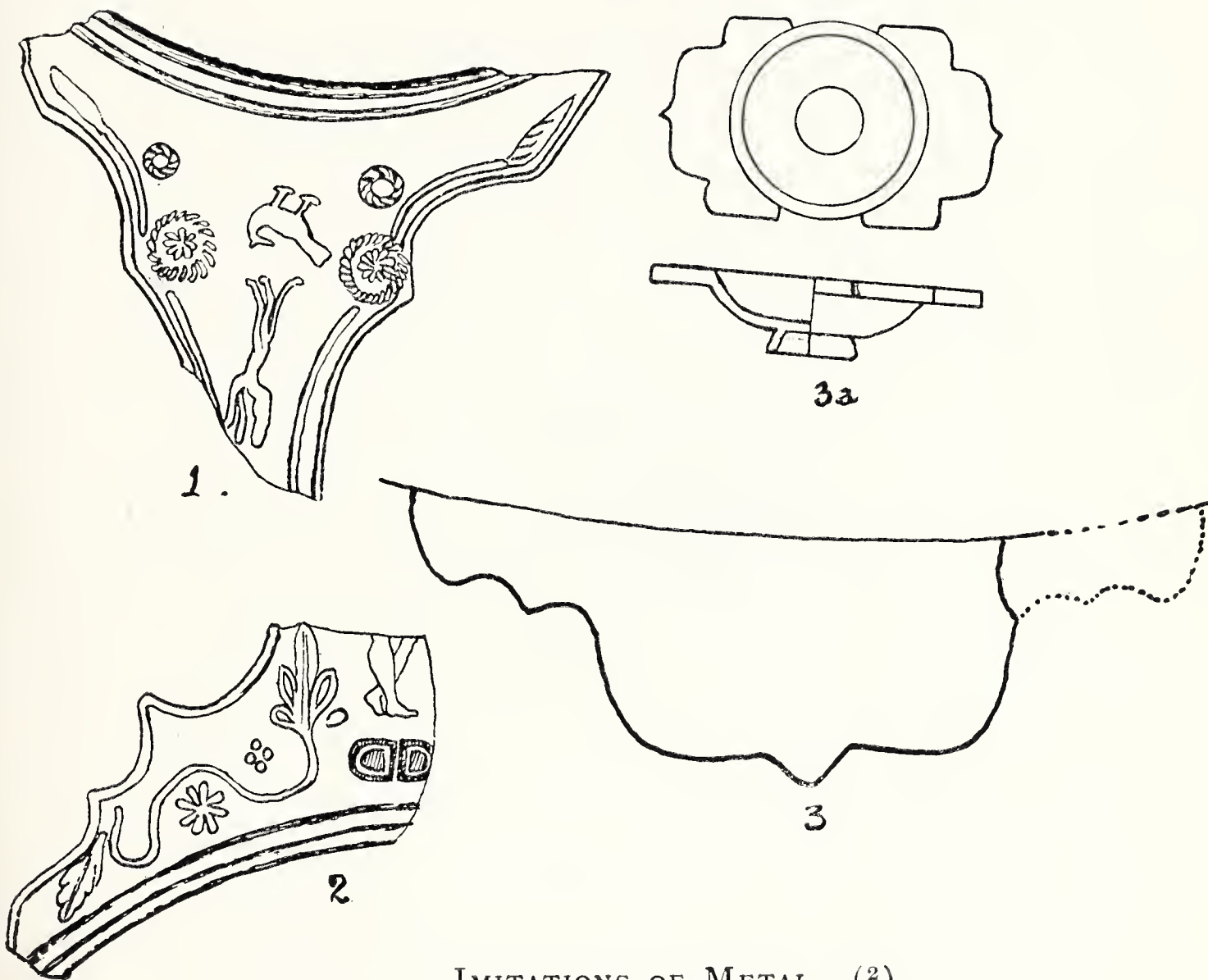




PLATE VII.



IMITATIONS OF METAL. ($\frac{2}{3}$)



A VANISHING YORKSHIRE VILLAGE.

By J. BACKHOUSE, F.Z.S., M.B.O.U.

THROUGHOUT the length and breadth of Yorkshire it would be difficult, perhaps impossible, to find a district more historically interesting, more full of charm to Scientist as well as to Antiquary, than that part known as Holderness, and nowhere in Holderness can compare in these respects with that part of it known as The Spurn, and its immediate neighbourhood on the mainland.

If you can imagine a squarish piece of glass, which at its right hand bottom corner has been melted and pulled out into a narrow point curving inwards at the tip where it becomes rather wider, you have some idea of this strange Yorkshire "Ultima Thule." On the outer side is the North Sea, on the inner the Humber, over whose entrance Spurn stands sentinel. Hull itself lies 20 miles up stream; Withernsea, a small watering-place, 14 miles along the North Sea shore. Opposite to the Head, across the Humber, is Grimsby in Lincolnshire. On the inside of the Point when the tide is low are enormous mud flats, several square miles in extent, the home of wild-fowl and innumerable eels.

Spurn Point lies in what was formerly a territory inhabited by the Parisi, to whom belonged *Petuaria* and *Portus Felix*, which may possibly have been at Beverley and Bridlington Quay respectively.

A Roman road has been traced according to Dr. Stukeley, from Falkirk to Patrington, but it would seem likely that it should have been continued to the actual coast near Spurn for transport purposes, though this cannot now be definitely ascertained; but of this we shall speak later.

The Spurn itself is some 4 miles long, at the commencement so narrow that if you stand upon the sandhill which forms it midrib, during a high Spring tide, you can throw a stone into the North Sea on one side and into the Humber on the other ! At the apex the width is most of an eighth of a mile, and here are the Lighthouse, Trinity House Signal Station, a Postal Telegraph Office, the Lightkeepers' Houses, and those belonging to the crew of the Trinity Lifeboat—to say nothing of a small and highly respectable "Public."

The nearest village of any size is Easington, 7 miles away ; the nearest Railway Station, Patrington, on the line between Hull and Withernsea, 7 more miles. There are also a small collection of cottages, a church, and two public houses (called respectively the Blue Bell and the Crown and Anchor) just short of where the Point commences. This place is known as Kilnsea, and is "the vanishing Yorkshire Village."

Geologically, this part of Holderness is practically all glacial in origin ; the low cliffs from Withernsea southward to the Spurn consisting almost entirely of boulder-clay, the ingredient stones of which are largely alien to the district ; Shapfell granite boulders jostling mountain limestone from Teesdale and so on. In places one may see very unmistakeable layers or beds of oystershells in clay, among which are found bones, pottery, &c. These were the "Kitchenmiddens" of the aborigines of Spurn. The actual Point, however, is composed of sand and shingle.

But where did the miles of mud on the landward or concave side of Spurn come from ?

For centuries Spurn has been a promontory, but its outline has altered and shifted about marvellously during historic times. The action of the North Sea upon the land for miles northward has been, and still is, enormous. It is found that the average erosion on this part of the coast is 7 feet in places, notably at Easington landing it is sometimes as much as 5 yards in a single year !

Along with this constant erosion the tides set in a southerly direction hereabouts, so that the mud from the cliffs is carried in suspension by the sea and deposited upon the inner side of Spurn, where the stillness is very noticeable, except with an off-shore breeze blowing.

Although two great rivers, the Ouse and Trent, directly affect the Humber estuary, it is hardly likely that they alone would account for the great Spurn "muds" ; moreover, the outrush of

rivers in definite channels has less influence in this direction than the quiet suffusing of the incoming tides.

The following points are specially desirable to note: the erosion of the Holderness coast is constant and exceedingly rapid, and it is manifested at Kilnsea and Easington beaches more than anywhere else; next, "in Tunstall there were 7 carucates in soke to Kilnsea, and one carucate in soke to Withernsea," we are told in the Domesday Survey, and that was equal to some 1280 acres. At the enclosure in 1777, there were 800 acres of arable land, 480 acres having been washed away. The "Blue Bell" Inn at Kilnsea was erected in 1847, and according to an inscribed stone in the wall, it was then 534 yards from the cliff. In 1876 it was 392 yards away, and at the present time the distance between the cliff and the Inn is only 200 yards. Lastly, the original Kilnsea village with its church is absolutely and entirely gone, having been swallowed up years ago by the voracious sea.

Kilnsea (the ancient) stood in a totally different position therefore relative to the Point to the straggling collection of houses we now see, and much further to eastward.

It will be obvious that if the sea cannot be artificially kept back by groining and embanking, in course of time Spurn Point will become Spurn Island, and Kilnsea had better remove bodily further inland and join itself to Easington.

Among the most fascinating books I have read is one written by Mr. Boyle, entitled, "The Lost Towns of the Humber." It would appear that some three or four more or less important towns have during historic times been situated where the Humber mud-flats are now the only feature of the landscape, every one of them swallowed up by sea and mud.

Ravenspurne, Ravenserodd, Friskmersk, Sunthorp, and others, all gone, and no trace left to mark their former existence. Of Friskmersk and Sunthorp comparatively little is known, and Boyle will best tell you what there is if you read his admirable book.

Ravenspurne and Ravenserodd, however, are so intimately connected with the subject of this paper, that it is necessary to touch upon their origin and history.

So far as can be ascertained, the most ancient place of fixed habitation in the Southern part of Holderness, as far as written evidence can be produced, appears to have been the *Præsidium* (or Garrison) of the Romans, which there is reason to believe was

either at Patrington or the town afterwards called Ravensburg, Ravensrode, or Ravenspurne, in the times of the Saxons and Danes. The suggested etymology of the name in its various renderings is as follows:—

“The Danes bore in their national standard the figure of a Raven, and when in their attacks on the people of Holderness, they landed at the first seaport which they found within the Humber, they are supposed to have fixed their Standard there, and to have called the place Ravensburg.

The termination Burg, the ancient Saxon name for a city, town or fortified place, might be changed to Rod or Rode, a cross, and then the name would be Ravensrode. Subsequently, the termination Spurne, a place from which to explore, might be adopted, and the name would be Ravenspurne.”

“When the place is called Ravenser or Ravenseret, probably the termination is taken from the Saxon word Syret, a place of retirement, shelter, or retreat.”

This important town flourished until the end of the 14th century before being finally given over to the inroads of the sea, but as early as the year 1347, the men of Ravenspurne complained of the influx of the sea, and stated that their town was often inundated. It was in all probability one of the most valued and important seaport towns on the East Coast of England, and must have been a place of very considerable magnitude.

Here Edward Baliol, King of Scotland, embarked for Scotland in 1332, being induced to assert his right to the Scottish Crown. It was here that in 1399 the banished Bolingbroke, Duke of Lancaster, and afterwards Henry IV., landed as claimant for the Crown of England. Hence Shakespeare in his play of Richard the Second says:—

“The banished Bolingbroke repeals himself,
And with uplifted arms is safe arrived at Ravenspurgh.”

Here, too, King Edward IV. after his flight from England, owing to the machinations of Warwick, landed in the year 1471 with Lord Hastings and about 500 men, marched to York, and there behaved like a beast. After assuring the citizens on oath, that he intended nothing prejudicial to King Henry, he was admitted into the city. In a few days, however, he declared himself King Edward the IV. to the “shame and dolor” of the

citizens of York. To quote Shakespeare once more, in the third part of his play King Henry VI., he says:—

“What then remains, we being thus arrived,
From Ravenspurg haven, before the gates of York
But that we enter, as into our Dukedom.”

By way of a permanent memorial of this historic landing, or possibly of the earlier landing, viz., of Henry IV., it would seem that a magnificent stone pillar, surmounted by a cross, was erected at Ravenspurne by one “Martini de la Mare.” It was afterwards removed to Kilnsea where it stood for many years until removed to Burton Constable, and finally was again removed to Hedon where it still exists. (*Plate I., Figs. A and B.*)

It is known that at Ravenspurne there was a Fair for 30 days, as far back as the 13th century, and the town was of sufficient importance to send two Members of Parliament for many years. In Willis's book, “An Account of the Disused or Obsolete Boroughs, that were anciently summoned to send Members to Parliament, and what returns they respectively made, (1750) we read:—

Co. York,
Ravenser Burgus.

Edward I.

33 P. West. Peter atte See, Will Pailebone
pro libertate Ravenser.

Edward II.

20 P. at West. Tho. le Taverner, John Wyt.

Edward III.

20 P. at West. Tho. le Taverner, John Wyt.

11 Council at West. Rob. de Sterneton, Hugh atte See,
Will de York.

In the fourth part of a brief Register of Parliamentary Writs, by William Prynne, Esq., 4 to 1664, is the following entry:—

Ebor. Ravenser Burgus.

2 E. 3 P. ap. West. Thomas le Tavernser,
John Wyt.

When Ravenspurne was in the zenith of prosperity, an adjacent islet or sandbank was connected to the town by a causeway of white rounded stones. These are visible at extremely low tides to this very day. Upon the islet thus joined to Ravenspurne it

would appear that a *depôt* for goods and landing-stage was built ; and this little Port became known as Ravenserodd. Boyle says, "The first inhabitant of Ravenserodd was an adventurous individual who took possession of a ship which had been stranded on the island, and turned it into a residence."

He apparently became famous as the seller of food and drink to sailors and others, and as houses began to be built, trade increased proportionately, and soon the "rapid growth of the new port" necessitated some ecclesiastical provision for the requirements of the inhabitants.

A Chapel of Ease was built, which was in existence as early as 1272, and was incorporated with the Church of Easington. But enough of this dry stuff!

In course of time so important did Ravenserodd become that it completely outgrew Ravenser in point of size. But what of Kilnsea alongside? It does not seem to be mentioned in connection with Ravenspurne or Odd, except that both were apparently in its parish. This suggests that Kilnsea was either a much older place, or that, as I incline to think, the two were inseparable.

Let us for a moment think of the position geographically again. We have, as seen from the sea, a line of low sand hills culminating in Spurn Point, three or four miles short of which there is a fishing village with Church and houses perched upon low mud-cliffs, *i.e.* Kilnsea. Nothing whatever could be seen in the bay behind, though by landing at Kilnsea, a ship's crew could be in Ravenser, a mile-and-a-half off, in less than half-an-hour had they been aware of it. Obviously the North Sea port of the town and in direct communication with it. A post from which the movements of passing vessels could be observed with ease and safety.

But Ravenspurn was filled with rich and thriving merchantmen. Their merchandise came from foreign lands, and had to be stored and then transhipped.

What better place than at Ravenserodd, which in times of either peace or war was a port so hidden from view that it would be necessary to sail right inside the curving point of Spurn before it could be perceived. Probably this town of Ravenspurn was *the* Port of the East Coast, the forerunner of its offspring Hull, or Kingston-upon-Hull as at first christened.

When I visit Kilnsea, therefore, I always feel that it is to all intents and purposes the last vestige of the township of Ravenspurn. To-day probably three relics only exist of old Ravenspurn:

(1) The ancient stone cross already alluded to; (2) and (3) a couple of church bells—one at Easington and one at Aldboro' near Hornsea.

There are many strange tales of old Kilnsea, and it is a treat to talk to some of the older villagers at Easington who remember the outline of the coast there being very different to what it is to-day. Part of the church steeple fell (undermined by the sea) in 1828, but the surrounding graveyard seems to have been going for years before that. One old man, by name Medforth, found his father's coffin protruding from the cliff, and transferred the bones to a grannery in Easington, where he kept them for years. Eventually, Medforth's sister having died, it was decided to bury her along with the parental bones, but the parson wanted double fees for a double burial, which was strongly objected to by the Medforth family, who urged that fees burial, had already been paid for their father. Whoever heard of two burial fees for one individual, they said! Finally, the undertaker solved the difficulty by surreptitiously introducing the father's bones into the daughter's coffin.

Mr. Philip Loten, father of a well known Easington Naturalist, was born at old Kilnsea, and actually remembered a road to the east or seaside of Kilnsea Church, and a few years later was present at a tragedy enacted in it. When the steeple had partly fallen, he, with another youth, had climbed to the top and were jumping across a huge rent in the tower roof, when his companion fell through to the bottom, and lay stunned and bleeding among stones and nettles below. (*Plate II., Fig. B.*)

The last person to be buried in Kilnsea old churchyard was a negro who was the victim of a shipwreck. This was of a ship called the "Armenius," and the wreck took place 86 years ago this February, 1909. The coast is a most treacherous one, specially in fog, and the present church-yard is filled with shipwrecked mariners. Nearly all the ablebodied men in Easington seem to belong either to the Lifeboat Crew or to the Rocket Brigade.

The last person to be baptized in Kilnsea Church would seem to have been one by name John Ombler, and the date was somewhere about 1823. Fortunately several relics exist of this interesting edifice:—

Portions of Stone Pillars, Lintels, &c.—Many of these are preserved in gardens, &c., both at Easington and Kilnsea.

Two Sanctuary Chairs.—Crown and Anchor Inn, Kilnsea.

Specimen of dated Memorial Tablet in Hull Museum.

Holy-water Stoup.—At Crown and Anchor in Kilnsea.

Old dated (1760) Tombstone.—At Crown and Anchor in Kilnsea.

The Stone Font, the Church Safe, the Registers, the Bible, old Service-book.—These are all preserved at Kilnsea.

The Silver Chalice, dated 1717, in the keeping of the Vicar of Easington, who is also custodian of the much more beautiful Chalice of Easington Church itself which bears the date 1571. This relic was lost sight of for many years, eventually coming to light on the mantle-piece of a certain farm-house, and actually in use as a tobacco jar.

Lastly—The Church-door Key, formerly in the possession of Mr. Philip W. Loten, of Easington, now in the York Museum. (*Plate III., Fig. A.*)

About the middle of last century, the only remaining evidences of Kilnsea Church were two great stones standing upright only a few yards apart, and I have it on good authority that a certain ship driven shorewards during a gale actually sailed between the stones, and their width apart proving inadequate, she stuck there and eventually went to pieces. Little did the old church builders expect such a strange eventuality.

“It is recorded that to a poor hermit, named Richard Reedbarrow, mariners are indebted for a lighthouse at Spurn.”

He had doubtless witnessed sailing vessels being destroyed in attempting to make for the Humber on stormy nights, and he commenced to erect a tower or beacon. But he had not the means to complete the edifice that was to be a guide by day and night to mariners who had to navigate the Humber. This must have been so far back as the year 1471, for we find that a hermit of the name of Danthorpe had built a hermitage at Ravenspurne, at which spot Edward IV. landed and found Reedbarrow, who evidently succeeded Danthorpe.

So Reedbarrow being a Yorkshireman, and in consequence of a determined character, petitioned Parliament for assistance in erecting his tower. He was successful, and letters patent were issued empowering the Mayor of Hull, for the time being—John Tutbury—and others to proceed with the construction and completion of the said tower.

“In the year 1676, a patent was granted by King Charles II. to Justinian Angell, of London, merchant, enabling him to continue, renew, and maintain certain lights that he had erected upon the

Spurn Point. Which lights were erected at the request of masters of ships using the Northern Trade; who, in their petition to His Majesty, represented that a very broad, long sand, about six or seven months before, had been discovered to have been thrown up near the mouth of the river Humber, upon which they had had great losses, and by means whereof they sailed in great danger in the night; and that having considered that lights erected upon the Spurn Point would in future prevent such danger, this had induced them to apply to Mr. Angell, as being the proprietor of the only piece of ground that was adapted to the purpose; and who, at their request, had erected two lights thereon, which the petitioners found to be not only of great benefit, but an absolute safety to all navigators on that coast." Smeaton says:—

"The spot of ground called Spurn Point, seems to have undergone great changes; for in Camden's time, about a century before the petition for the lights, there seems to have been no more than a pretty sharp head of land that did not extend far from Kilnsey and was then called Spurn Head."

Then Smeaton built a fine lighthouse upon piles at what is now a spot some half-a-mile or so from the actual "Point"; but in the early nineties this edifice became unsafe and was pulled down, when the piles were found to be rotten and the huge superstructure had been simply resting upon these and rocking severely in every gale. (*Plate II., Fig. A.*)

The present magnificent structure is some 200 feet high and stands upon a deep concrete base some 10 yards inland (if such an expression is allowable there) from old Smeaton's site.

The enormous stretches of mud, before alluded to, at low-water time form an ideal feeding ground for myriads of shore birds. No sooner does the tide begin to ebb than parties of birds, sometimes many thousands strong, make their way across from the Lincolnshire coast, and topping the sand-hills of Spurn, or wheeling over and over it for awhile, finally descend to reap their harvest of small molluscs and sand-eels from the slimy ooze. Curlews, Redshanks, Godwits, Turnstones, Knot, Grey Plover, Sanderlings, and Dunlin, all are there, though we incline to think in less enormous quantities than used to be the case. Out upon the waters of the Humber, Duck often congregate in large numbers, and are systematically hunted at flighting time by a most ingenious process. At low tide, a deep hole is dug a certain distance from dead-low water, into which first goes an armfull of straw, then a

man with a gun who sits there like a spider in his web until the incoming tide begins to hustle the Duck at its edge, making them move up and down in small flocks. In hard weather many are thus shot, the bulk being Mallard, Widgeon, or Teal.

The shore of the Point itself is at certain times of the year and states of the tide a little paradise of birds. The "Bents" and "Sea Buckthorns" growing along its middle length may at one time be full of Short-eared Owls, at another with Woodcock, or again with Warblers. You never know exactly what will turn up, and Spurn and its immediate neighbourhood have produced many of the rarest species of birds now included in the British list. The Macqueen's Bustard, Rose-coloured Pastor, Sand Grouse, Rustic Bunting, Barred Warbler, and a host of other names could be given if needful.

Now these birds are by no means species which would stay with us to breed,—here one day and away the next. They appear only as accidental lingerers from some migratory movements between breeding ground and wintering place, or *vice versa*.

Especially perhaps during the months of October and November, wonderful flights take place at Spurn; the direction of course being at such times of year, broadly speaking from North to South, modified by circumstances of breeding locality.

It is on such occasions that the great Spurn lantern, with its marvellous revolving beams of light, acts for hundreds of feathered wanderers as a landmark in their flight. But observe this: if the weather at such time be foggy and drizzling, it often happens that the landmarks can only be seen by the birds when they fly low, and in doing so, such is their speed of wing that when they catch sight of the revolving beams it is too late perhaps to do more than swerve upwards, in which case they crash into the metal dome above, or if downwards on to the unyielding masonry, and in either case break their necks.

I have known too, when thousands of birds have hovered, screaming and twittering round the lantern at dead of night like a swarm of bees, unable to resist the attractive light, and at such a time I have stood on the gallery of the lantern and caught the flutterers in my hand and flung them off in the darkness out of harm's way. Sometimes when the conditions are exactly favourable to such an event, great mortality occurs. On the night just mentioned there were 70 birds counted when the tale was told next morning—the verdict in every case being "accidental death." If

Spurn light were fixed, and not revolving, still greater mortality would result, but the movement as at present gives warning of danger which a great many birds seem to comprehend and respond to. On October 18th, 1908, 650 birds were picked up dead, having struck the lantern; and in the following week, Oct. 25th, 537, close on 1200 birds in two nights—a record slaughter.

All along our coasts where systematic observations have been made, it has been noticed that great rushes or waves of migration are nearly always heralded by small parties of tiny Golden-crested Wrens, and Spurn experience tells the same tale.

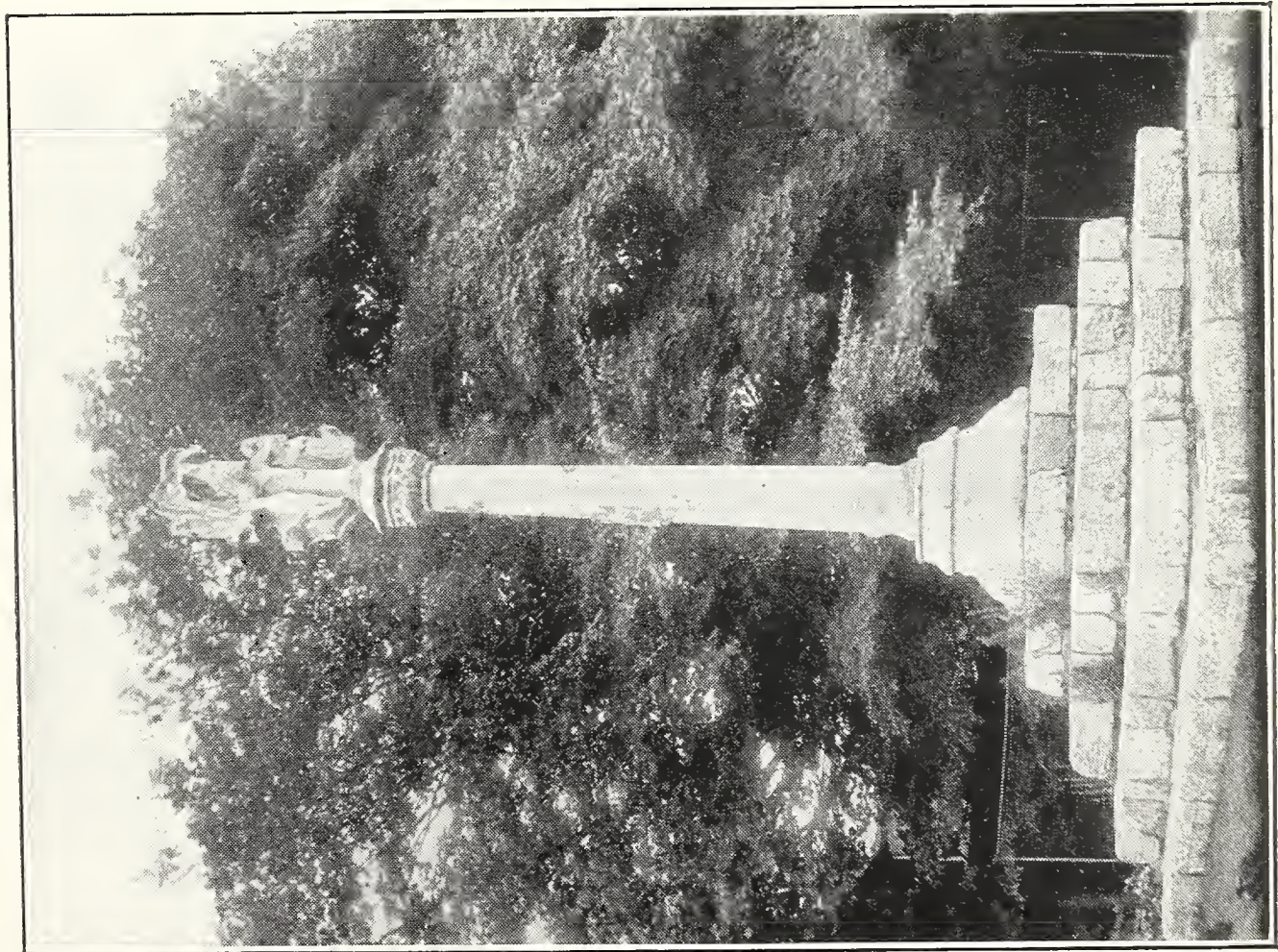
The whole subject of migration is a most fascinating one, and nowhere perhaps in the British Isles can one see so much of it (if one has luck) as at Spurn.



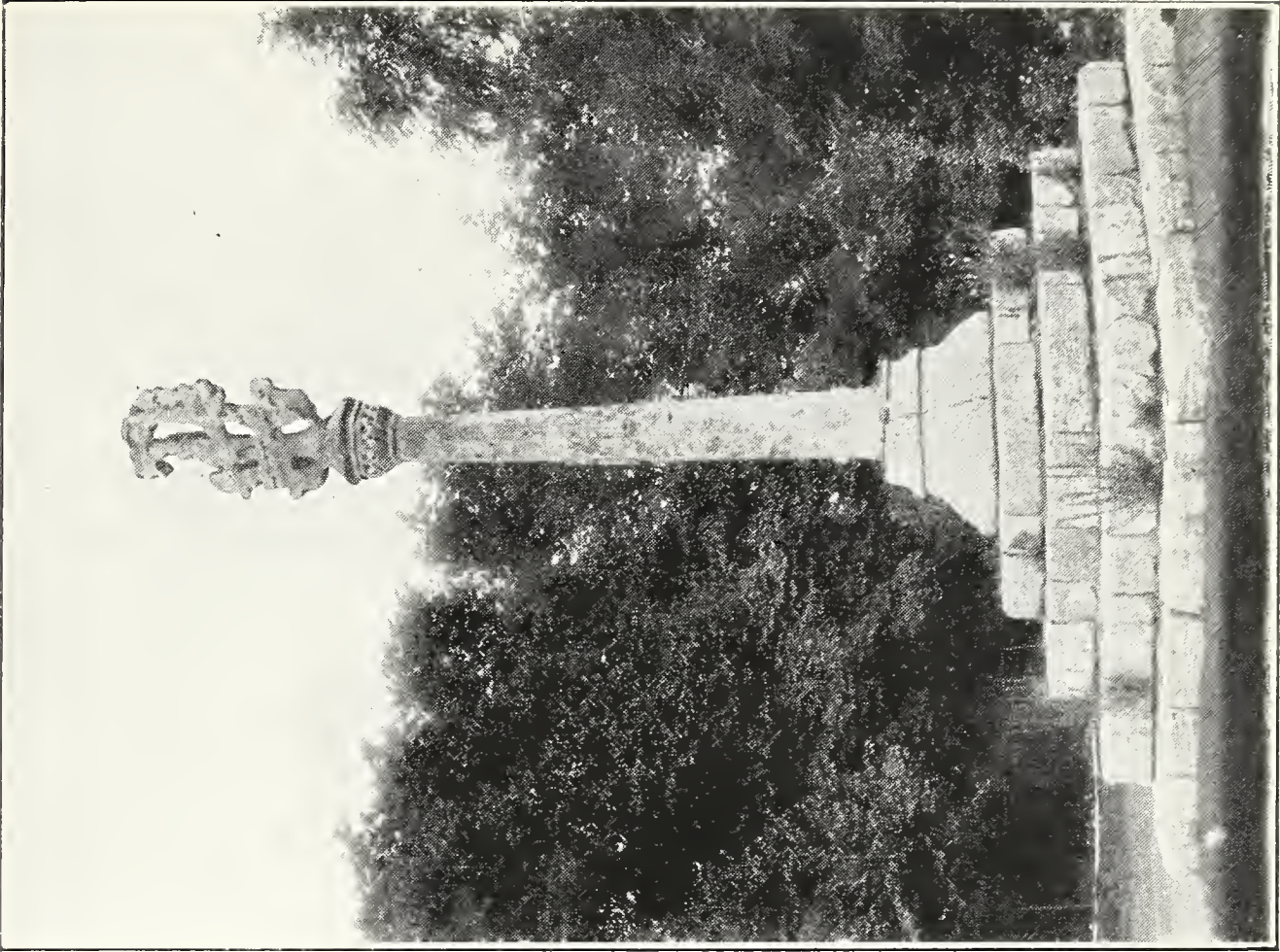
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*Fig. A. WEST SIDE OF THE OLD KILNSEA CROSS.
Photo. by Oxley Graham.*



*Fig. B. EAST SIDE OF THE OLD KILNSEA CROSS.
Photo. by Oxley Graham.*





Fig. A.

A.D. 1829.

SMEATON'S LIGHTHOUSE—SPURN POINT.

Photo. by W. Watson

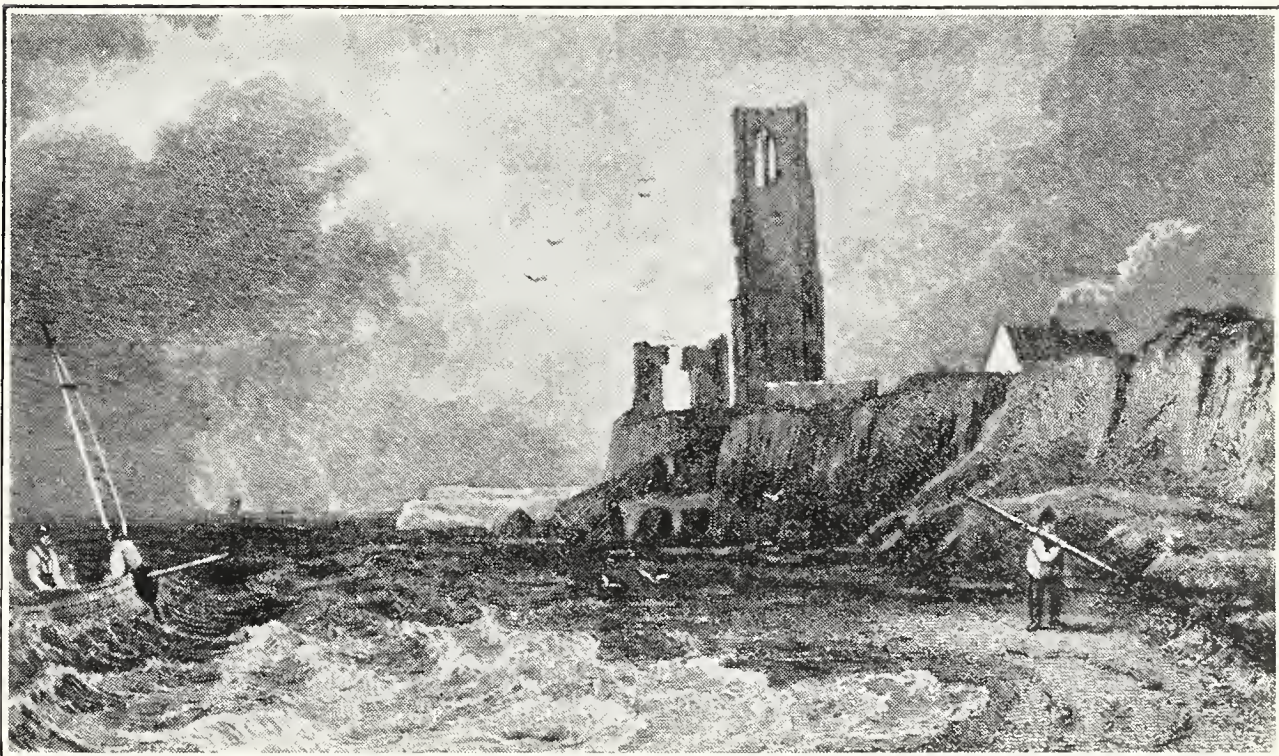


Fig. B.

A D. 1829.

RUINS OF KILNSEA OLD CHURCH.

Photo. by W. Watson.



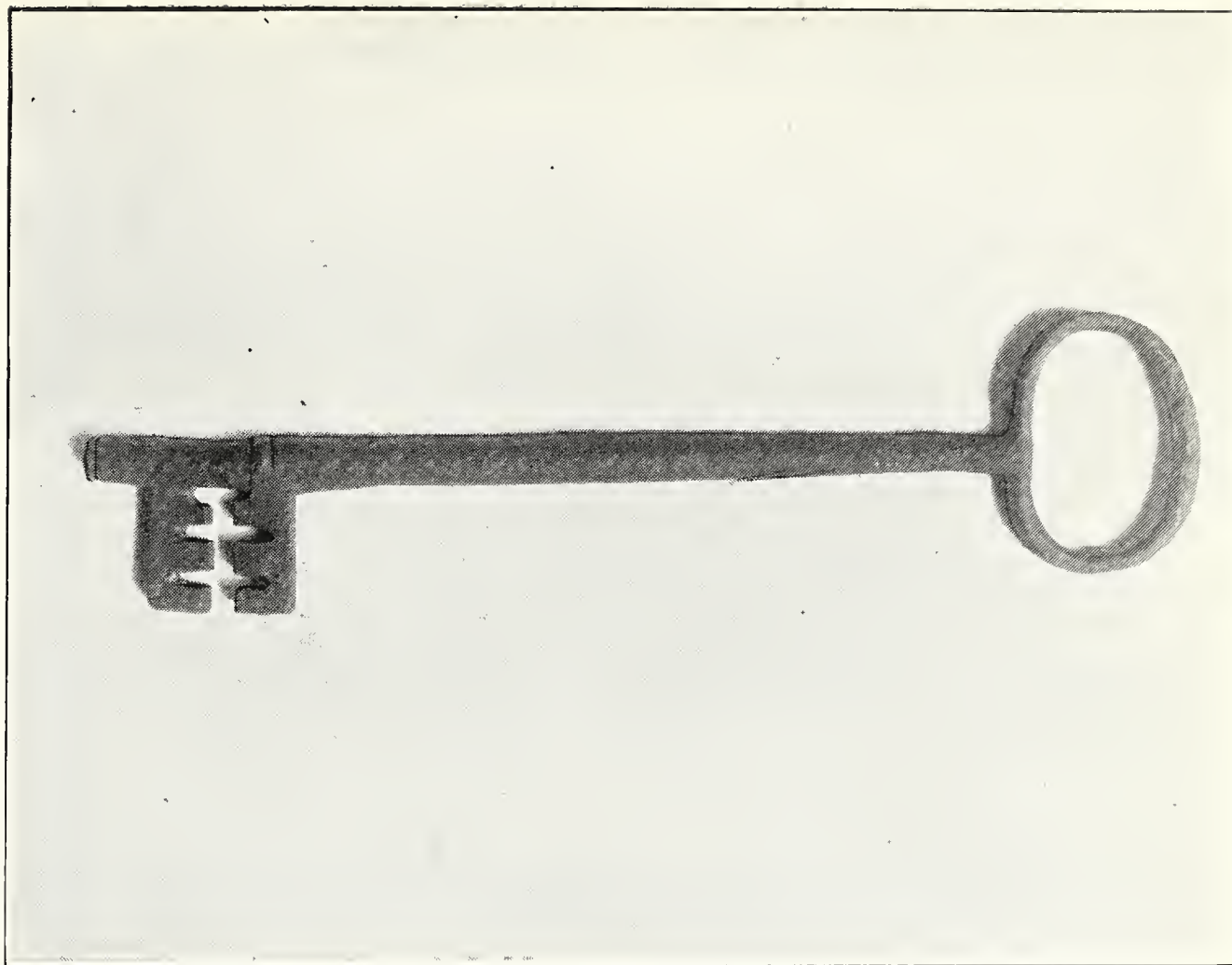


Fig. A.

THE KEY OF KILNSEA OLD CHURCH.

Photo. by W. Watson.



Fig. B.

ROAD BETWEEN EASINGTON AND KILNSEA.
Flooded 2 feet deep by the Sea, September 11th, 1908.

Photo. by Oxley Grabham.



